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*State. USDA Field  
Committee on the Missouri Basin*

*M. M. Regan  
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UNITED STATES DEPARTMENT OF AGRICULTURE

A PROPOSED SIX YEAR PROGRAM OF AGRICULTURAL LAND AND WATER  
RESOURCE CONSERVATION AND DEVELOPMENT  
FOR THE MISSOURI BASIN

1950-1955



Prepared by  
The USDA Field Committee on the Missouri Basin

This statement has been prepared for the use of the Missouri Basin Inter-Agency Committee and others interested in agricultural development in the Missouri Basin. It outlines various authorized activities which the USDA Field Committee believes should be carried out by the Department of Agriculture in the Missouri Basin. Activities which are needed but are not now authorized will be outlined in a subsequent report.

Lincoln, Nebraska  
July 1948



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# NATIONAL FOREST PROTECTION, MANAGEMENT AND DEVELOPMENT

## Forest Service

### I. Objectives:

The objective will be to protect, develop and manage the National Forests in such a manner that they will yield the maximum of usable water, timber, forage, recreation and fish and game resources, and, under such management, to reduce the intensity of soil erosion, siltation and flood problems. The work should be done on a sound, coordinated, continuous program basis so that the public forest areas will contribute

their part in the economic and social development of the Missouri Basin.

### II. Problems:

There are 16 million acres of National Forest lands within the Missouri Basin and additional acreage is proposed for acquisition. The accelerated program proposed on these lands is necessary for protecting their natural resources from destruction, developing productivity to a level consistent with their importance in the over-all

Basin economy, and management on a sustained yield basis for all the forest products. There is an urgent need for intensifying National Forest programs in accordance with the financial requirements (Table 2) required for attaining this full multiple-use purpose of the several forest resources.

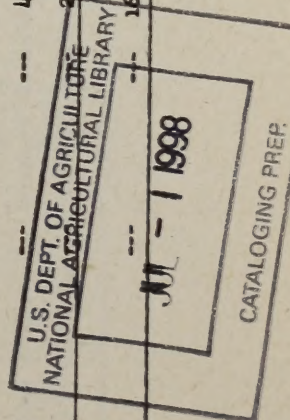
### III. Significance:

The future welfare and healthy economic development of the Basin and its impact in turn upon the

Table 1 ESTIMATED NEEDS (AREA OF NATIONAL FOREST TO BE COVERED BY PROTECTION, MANAGEMENT AND DEVELOPMENT)

STATE	Total Needs : Annual Needs :		Accom- : Accom- :		ESTIMATED NEEDS BY FISCAL YEARS								Total Esti- : Total Requirements	
	for Non-Cont. : Program	for Cont. : Program	plishment : FT 1948	plishment : FT 1949	1950	1951	1952	1953	1954	1955	1950-1955	after 1955		
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)		
Missouri	---	---	100,000	100,000	200,000	200,000	300,000	400,000	500,000	600,000	---	---		
Iowa	---	---	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	---	---		
Minnesota	---	---	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,200,000	1,200,000	---	---		
Kansas	---	---	8,000,000	8,000,000	8,000,000	8,100,000	8,100,000	8,200,000	8,200,000	8,200,000	---	---		
Nebraska	---	---	4,300,000	4,300,000	4,300,000	4,300,000	4,300,000	4,300,000	4,300,000	4,300,000	---	---		
South Dakota	---	---	2,300,000	2,300,000	2,300,000	2,400,000	2,400,000	2,400,000	2,400,000	2,500,000	---	---		
North Dakota	---	---	16,000,000	16,000,000	16,100,000	16,300,000	16,400,000	16,400,000	16,800,000	17,000,000	---	---		
Montana	---	---	16,000,000	16,000,000	16,100,000	16,300,000	16,400,000	16,400,000	16,800,000	17,000,000	---	---		
Wyoming	---	---	16,000,000	16,000,000	16,100,000	16,300,000	16,400,000	16,400,000	16,800,000	17,000,000	---	---		
Colorado	---	---	16,000,000	16,000,000	16,100,000	16,300,000	16,400,000	16,400,000	16,800,000	17,000,000	---	---		
TOTAL	---	---	16,000,000	16,000,000	16,100,000	16,300,000	16,400,000	16,400,000	16,800,000	17,000,000	---	---		

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NATIONAL FOREST PROTECTION, MANAGEMENT AND DEVELOPMENT, Continued

Forest Service

entire country rests fundamentally upon the natural resources which are not unlimited and which have been depleted at an alarming rate. The expansion and more intensive development of the National Forests are necessary to help fill the gap between supply and demand, both present and future, for forest products. The basic policy of the Forest Service is to help achieve, directly and through widespread cooperative effort, the efficient utilization of all the resources and services which forests and the associated wildlands are capable of providing under sound, continuous protection and management. The major resources are discussed briefly in the following separate paragraphs:

1. Forests as Water Resource Areas: These National Forest areas, in large part, comprise the upper watershed areas, or might be termed the roof top from which the water supply flows. Conservatively, the yield is 15 million acre feet of water annually. Land management policies on these National Forest areas have been geared to quality and quantity water production. In order to continue these water yields, the intensification of the protection and management of these National Forest areas must be increased.

Due to past abuse, some of these watershed areas need forest planting, range reseeding, or erosion control structures so that future yields will be assured.

2. Forests as Timber Resource Areas: The National Forest areas are yielding approximately 125 million board feet of forest products annually. Potentially they could yield more than double this amount. To yield this increased cut will require several hundred miles of access roads into remote forest areas. In addition to roads, there is need for increased technical assistance for the proper handling of this increased timber cut.

Many areas within the National Forests need to be planted to trees for future timber products.

In order to give maximum production now and for future generations, forest protection measures should be increased. Forest fire protection within the National Forests needs to be increased above the present level. Insect and disease work has lagged behind the needs on the ground. At the present time, losses due to insect attacks, particularly, amount to considerable volumes annually and preventive measures should be stepped up to abate these losses.

3. Grazing Resource on National Forests: The grazing resources on the National Forests continue to be an important cog in the economy. During the current year approximately 360,000 cattle and horses and 1,280,000 sheep and goats are being grazed on the National Forest grazing areas. Many of these range lands constitute the only vegetative cover on these watersheds. It is imperative that this range cover be managed in a manner that will assure continued productivity and management. Many of these areas need range surveys to determine present carrying capacities, seasons of use and other range management needs. Boundary fences are needed for proper distribution and to prevent trespass. Water developments are needed for proper distribution of stock and proper handling of this stock. Where suitable, many of the ranges need reseeding to improve the forage and watershed values. Accomplishment of the range management job on a suitable level will require intensified efforts in the form of increased staff on the National Forests, increased numbers of grazing guards, range drivers, etc.



# NATIONAL FOREST PROTECTION, MANAGEMENT AND DEVELOPMENT, Continued

## Forest Service

4. Recreational and Game Resources: These National Forest areas comprising the mountainous and the more scenic areas in the West are being used more and more by tourists and others for recreational purposes. Existing facilities are not maintained to the standard that is needed. Additional facilities are needed to meet these recreational needs. The economy of many of the States is becoming more and more dependent on outside tourist income. It is imperative that

recreational facilities and policies on the National Forests be geared to meet these needs. These National Forest areas comprise the natural habitat for a large wildlife population, particularly big game. These areas should be managed with wildlife habitat even more in mind than in the past. Additional cooperation with the states in wildlife habitat management is needed if the land management responsibilities are to be redeemed.

IV. Plan of Work:  
The work on the National Forests will be carried out on the areas shown on the attached map. It will be conducted by the Forest Service as a Federal program on Federally-owned lands.

V. Financial Requirements:  
Table 2 shows the financial requirements for this activity.

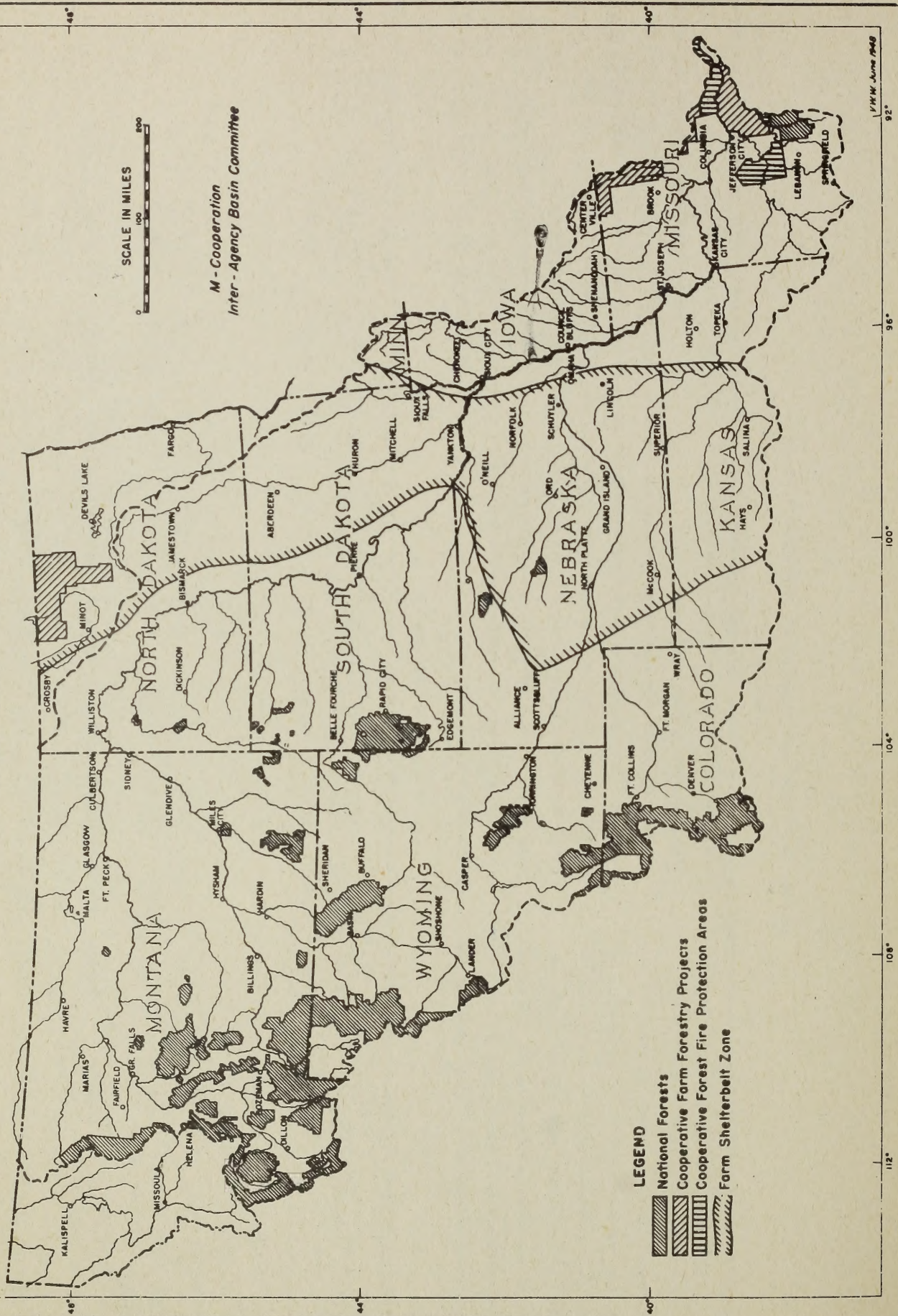
VI. Authorization: (16 USC 471-5831) (23 USC 23, 23a).

Table 2. ESTIMATED COST

STATE	Estimated Cost : 1948 : 1949 :		Funds Required by Fiscal Years						Total Est. Cost : Total Unabsorbed. Cost			
	TOTAL : Annual for : Fiscal Year : Fiscal Year :	Funds : Funds : Funds : Funds : Funds :	1950 : 1951 : 1952 : 1953 : 1954 : 1955 :	(dollars) (dollars) (dollars) (dollars) (dollars) (dollars)	(dollars)	(dollars)	6-yr. Prog. : and Funds Req. : 1950 - 1955 : after FY 1955 :	(dollars) (dollars)				
Missouri	---	154,000	50,000	58,900	151,800	151,600	151,200	152,000	152,000	154,000	912,600	---
Iowa												
Minnesota												
Illinois												
Nebraska	---	75,400	40,000	46,700	63,200	66,300	73,500	73,400	73,400	75,400	425,200	---
South Dakota	---	556,200	800,000	353,400	495,100	499,100	520,700	546,300	547,300	556,200	3,164,700	---
North Dakota												
Montana	---	2,836,700	710,000	833,500	2,503,000	2,521,900	2,721,200	2,788,800	2,790,800	2,836,700	16,162,400	---
Wyoming	---	957,500	350,000	411,200	883,900	895,000	903,900	935,200	936,200	957,500	5,511,700	---
Colorado	---	731,200	300,000	352,300	651,000	657,100	705,500	721,300	722,300	731,200	4,188,400	---
TOTAL	---	5,311,000	1,750,000	2,056,000	4,718,000	4,791,000	5,076,000	5,217,000	5,222,000	5,311,000	30,365,000	---



# MISSOURI RIVER DRAINAGE BASIN U. S. DEPARTMENT OF AGRICULTURE



M-Cooperation  
Inter-Agency Basin Committee



# ACQUISITION OF LAND FOR NATIONAL FORESTS

## Forest Service

### I. Objectives:

Acquire, principally through purchase, those privately owned forest and watershed lands which must be publicly owned to assure adequate protection, restoration and long-term conservation management of the timber, forage and water resources.

able as watersheds. Outside of the national forests are extensive areas of similar lands, largely privately owned. Some of these lands are of low productive quality. Others have, through over-cutting of timber, over-grazing and other forms of exploitation, been badly damaged and depleted of their resources so that the probabilities of restoration and permanent management in private ownership appear dubious at best. As to those as yet unexploited, the prospects for resource utilization under sound conservation practices are not encouraging. To the extent that these forest and watershed lands cannot be expected to receive the affirmative management necessary to conserve and restore their resources and protect their watershed capabilities, public acquisition and administration appear necessary.

### III. Significance:

These lands are important in the Basin as watersheds, as sources of timber and timber products both for local and industrial use, as sources of forage for livestock, and for recreation and production of wildlife. Given adequate protection and scientific management under sound forestry and range management principles, they

### II. Problems:

There are approximately 2-1/2 million acres of privately owned lands within the boundaries of the national forests in the Missouri Basin, the major part of which are chiefly suitable for timber and forage production and value-

Table 3. ESTIMATED NEEDS, Acquisition of Land for National Forests

STATE	Total Needs for Non-Cont. Program (acres)	Annual Needs for Cont. Program (acres)	Accom- plishment FY 1948 (acres)	Accom- plishment FY 1949 (acres)	Estimated Needs by Fiscal Years					Total Requi- sited Needs 1950-1955 (acres)		Total Requirements after 1955 (acres)
					1950 (acres)	1951 (acres)	1952 (acres)	1953 (acres)	1954 (acres)	1955 (acres)		
Missouri	1,700,000	---	1,253	1,400	37,000	56,000	74,000	90,000	90,000	90,000	437,000	1,263,000
Iowa												
Minnesota												
Kansas												
Nebraska												
South Dakota	200,000	---	---	---	4,000	6,000	8,000	11,000	11,000	11,000	51,000	149,000
North Dakota												
Montana	1,000,000	---	---	---	21,000	32,000	41,000	53,000	53,000	54,000	254,000	746,000
Wyoming	250,000	---	---	---	4,000	7,000	10,000	12,000	12,000	13,000	58,000	192,000
Colorado	650,000	---	---	---	16,000	25,000	33,000	42,000	42,000	42,000	200,000	650,000
TOTAL	4,000,000	---	1,253	1,400	82,000	126,000	166,000	208,000	208,000	210,000	1,000,000	3,000,000



# ACQUISITION OF LAND FOR NATIONAL FORESTS, Continued

## Forest Service

can contribute substantially and permanently to the economic structure of the Basin. Contrary-wise, if subjected to unregulated exploitation and abuse the contributions of raw materials from such lands will no doubt progressively decline and the probabilities of soil erosion and of impairment of watershed functions progressively increase.

### IV. Plan of Work:

Purchase of these lands can be accomplished as an extension of the national forest purchase program, under the existing legislation (Act March 1, 1911,

36 Stat. 961, as amended), or under supplementary authority for this particular area. Under the March 1, 1911 act, it will be necessary for the legislatures of the states of Colorado and Wyoming to consent to the purchases. Such consent has been given by the other states concerned.

### V. Financial Requirements:

Considerable further study is needed to ascertain just how extensive is the need for public acquisition of this type of land, the degree to which such should be done as part of the national forest program, priority areas and similar information. From data at hand, however, it appears

### VI. Authorization:

Weeks Law, Act of March 1, 1911, as amended. (16 USC 513-519, 521). Act of March 20, 1922 (16 USC 1485). Act of March 3, 1925 (16 USC 516).

Table 4. ESTIMATED COST

STATE	Estimated Cost		1948		1949		Funds Required by Fiscal Years					Total Est. Cost		Total Unshed. Cost : 6-Yr. Prog. : : 1950 - 1955 : : after FY 1955 : (dollars)
	: TOTAL : (dollars)	: Annual for Cont. Programs : (dollars)	: Fiscal Year : (dollars)	: Fiscal Year : (dollars)	: Funds : (dollars)	: 1950 : (dollars)	: 1951 : (dollars)	: 1952 : (dollars)	: 1953 : (dollars)	: 1954 : (dollars)	: 1955 : (dollars)	: 1950 - 1955 : (dollars)		
Missouri	10,200,000	---	5,000	7,000	225,000	330,000	440,000	540,000	540,000	540,000	2,645,000	7,565,000		
Iowa														
Minnesota														
Kansas														
Nebraska														
South Dakota	1,200,000	---	---	---	25,000	35,000	50,000	65,000	65,000	65,000	305,000	695,000		
North Dakota														
Montana	6,000,000	---	---	---	125,000	190,000	250,000	320,000	320,000	320,000	1,525,000	4,475,000		
Wyoming	1,500,000	---	---	---	25,000	45,000	60,000	75,000	75,000	75,000	395,000	1,115,000		
Colorado	5,100,000	---	---	---	100,000	150,000	200,000	250,000	250,000	250,000	1,200,000	3,900,000		
TOTAL	24,000,000	---	5,000	7,000	500,000	750,000	1,000,000	1,250,000	1,250,000	1,250,000	6,000,000	18,000,000		



## FOREST AND RANGE WATERSHED RESEARCH

### Forest Service

#### I. Objectives:

To determine best methods of managing forest and range resources in the Missouri Basin in the interest of increasing productivity of all forest and range lands, many of which have been depleted by past abuse, preserving and building up the soil, maintaining the water resources of the watersheds and providing high quality water, curtailing water losses, reducing erosion and damages from flood waters and sedimentation, controlling wind erosion and restoring and protecting the cover; to aid in the development of forest and range watershed policies and programs regionally and nationally; to assist in protection and management of national forest and other public lands.

#### II. Problem:

Very little forest and range research has been carried on in the past in the Missouri Basin, yet the forest and range watershed lands in this vast

area have an important bearing on national as well as local problems. The maintenance of the cover, the building up of the resource, and the repair of past damage are all essential to any plan for the development of the forest, range and water resources.

#### III. Significance:

Forest and range lands are at the headwaters of the Missouri River. Although relatively small in land area in comparison to the Missouri Basin as a whole, they provide a chief source of water supply to meet domestic, industrial and agricultural needs.

The use or abuse made of these lands very largely determines the kind and character of runoff and the amount and character of the debris or sediments that the River carries. Because a considerable amount of the land at the headwaters of the River is in public ownership, it is essential that these lands be properly managed. Research will supply the basic data and information on which sound management plans can be pre-

pared. Considerable areas of both public and private lands are already in a deteriorated condition as a result of past abuse. Research is essential if these lands are to be restored to productivity within a reasonable period of time.

#### IV. Plan of Work:

The research proposed will be carried out through the several regional forest and range experiment stations already established in the area. A series of branches or work centers, some of which are already in operation on a small scale, will be established, each to serve the needs of a considerable area (up to about ten million acres). Experimental areas will be set aside for research from national forests or arrangements made for the use of appropriate lands by the administering agencies. These activities fit into the regular research program of the Forest Service under the general authorizing provisions

FOREST AND RANGE WATERSHED RESEARCH, Continued

Forest Service

of the McNary-McSweeney Forest Research Act

VI. Authorization:

of 1928.

Act of May 22, 1928, as amended (16 USC 581a,

V. Financial Requirements:

581b).

The finances needed are shown in the esti-

mates. About 75 percent of the cost is for

salaries. (Table 5)

Table 5 ESTIMATED COST

STATE	Estimated Cost		1949		1950		1951		1952		1953		1954		1955		Total Est. Cost : Total Unshed. Cost	
	TOTAL	Annual for	Fiscal Year		Fiscal Year		Fiscal Year		Fiscal Year		Fiscal Year		Fiscal Year		Fiscal Year		6-Yr. Prog. : and Funds Req. : 1950 - 1955 : after FY 1955	(dollars)
			(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)			
Missouri	---	36,000	7,800	7,800	24,000	24,000	27,000	30,000	30,000	33,000	36,000	36,000	36,000	36,000	36,000	186,000	---	
Iowa	---	24,000	5,200	5,200	16,000	16,000	18,000	20,000	20,000	22,000	24,000	24,000	24,000	24,000	24,000	124,000	---	
Minnesota	---	6,000	1,300	1,300	4,000	4,000	4,500	5,000	5,000	5,500	6,000	6,000	6,000	6,000	6,000	31,000	---	
Kansas	---	24,000	5,200	5,200	16,000	16,000	18,000	20,000	20,000	22,000	24,000	24,000	24,000	24,000	24,000	124,000	---	
Nebraska	---	66,000	14,300	14,300	44,000	44,000	49,500	55,000	55,000	60,500	66,000	66,000	66,000	66,000	66,000	341,000	---	
South Dakota	---	90,000	19,500	19,500	60,000	60,000	67,500	75,000	75,000	82,500	90,000	90,000	90,000	90,000	90,000	465,000	---	
North Dakota	---	54,000	11,700	11,700	36,000	36,000	40,500	45,000	45,000	49,500	54,000	54,000	54,000	54,000	54,000	279,000	---	
Montana	---	132,000	28,600	28,600	88,000	88,000	99,000	110,000	110,000	121,000	132,000	132,000	132,000	132,000	132,000	682,000	---	
Wyoming	---	108,000	23,400	23,400	72,000	72,000	84,000	90,000	90,000	99,000	108,000	108,000	108,000	108,000	108,000	558,000	---	
Colorado	---	60,000	13,000	13,000	40,000	40,000	45,000	50,000	50,000	55,000	60,000	60,000	60,000	60,000	60,000	310,000	---	
TOTAL	---	600,000	130,000	130,000	400,000	400,000	450,000	500,000	500,000	550,000	600,000	600,000	600,000	600,000	600,000	3,100,000	---	



# PRIVATE FORESTRY COOPERATION, FIRE PROTECTION ON FORESTRY ON STATE AND PRIVATELY OWNED FOREST AND WATERSHED LANDS

## Forest Service

### I. Objective:

To extend cooperative protection from fire to all State and privately owned forest and highly important watershed lands within the Missouri River Basin.

### II. Problems:

Of approximately 11,907,000 acres of State and privately owned forest and important watershed lands in the Missouri Basin, only 2,800,000 now receive the benefit of any organized effort to protect them from

fire. The urgent problem, therefore, is to extend organized protection work to include about 9,107,000 acres of forest and watershed lands not now protected. Their protection is highly important from the standpoint of watershed protection. reduction of siltation of streams and reservoirs, timber production, recreational use and improvement of wildlife habitat.

III. Significance:

Annual, or at least periodic, burning of the unprotected forest and watershed lands by wild fire reduces the ability of the average acre of such lands to provide its maximum in growth of forest products, production of game and fish and other recreational benefits, retention of rainfall in the soil and protection of the soil against erosive action. It is important to local and Basin economy that each acre of such lands be protected from fire, thus enabling it to produce its maximum of such benefits.

Table 6. ESTIMATED NEEDS (AREA TO BE GIVEN FIRE PROTECTION)

STATE	Total Needs: Annual Needs:		Accomplishment:		Accomplishment:		Estimated Needs by Fiscal Years								Total Estimated Needs:								
	Program	(acres)	Program	(acres)	FY 1948	(acres)	FY 1949	(acres)	1950	(acres)	1951	(acres)	1952	(acres)	1953	(acres)	1954	(acres)	1955	(acres)	after 1950 - 1955	(acres)	
Missouri	5,100,000		784,000		784,000		784,000		1,765,000		2,157,000		3,490,000		5,100,000		5,100,000		5,100,000		22,712,000		
Iowa	231,000		30,000		30,000		30,000		108,000		115,000		154,000		231,000		231,000		231,000		1,070,000		
Minnesota																							
Kansas																							
Nebraska																							
South Dakota	644,000		500,000		500,000		500,000		500,000		572,000		644,000		644,000		644,000		644,000		3,649,000		
North Dakota																							
Montana	1,714,000		286,000		286,000		286,000		524,000		1,024,000		1,476,000		1,714,000		1,714,000		1,714,000		8,166,000		
Wyoming	2,400,000							600,000		800,000		1,600,000		1,600,000		2,400,000		2,400,000		2,400,000		10,200,000	
Colorado	1,818,000		1,200,000		1,200,000		1,200,000		1,382,000		1,818,000		1,818,000		1,818,000		1,818,000		1,818,000		10,472,000		
TOTAL	11,907,000		2,800,000		2,800,000		2,800,000		4,879,000		6,486,000		9,182,000		11,907,000		11,907,000		11,907,000		56,268,000		



PRIVATE FORESTRY COOPERATION, FIRE PROTECTION ON STATE AND PRIVATELY OWNED FOREST AND WATERSHED LANDS, Continued

Forest Service

IV. Plan of Work:

Section 2 of the Clarke-McNary Act authorizes the Department through the Forest Service to cooperate with State forestry agencies in protecting State and privately-owned forest and highly important watershed lands from fire. Colorado, Iowa, Missouri, Montana and South Dakota have State forestry departments, and are now cooperating with the Federal government in protection work. The State, in each case, has direct supervision of the work. Lack of sufficient State and Federal appropriations has been the main obstacle in extension of protection to unprotected

areas in each State. In these five States, the cooperative machinery and basic organization is already set up. Increased State and Federal funds will implement expansion to bring all forest and important watershed areas under organized protection. Wyoming has no State forestry organization, but has taken the initial step toward obtaining one by publishing a bulletin entitled "Importance and Need of Forest Fire Control in Wyoming". If and when the State Legislature sets up a State forestry department, passes enabling legislation, and appropriates money for forest fire control work, the State can then

qualify for assistance under the cooperative program.

V. Financial Requirements:

Table 7 showing estimated costs is based on the premise that if money becomes available, any of the states involved can intensify protection or make sound expansion from present area protected to total area needing protection over a period of 3 to 4 years. Costs shown are for the Federal share only, assuming a 50-50 State-Federal sharing of protection costs.

VI. Authorization: Clarke-McNary Act, June 7, 1924.

Table 7. Estimated Federal Cost

STATE	Estimated Cost		1949		1950		1951		1952		1953		1954		1955		Total Est. Cost		Total Unshed. Cost	
	: Annual for		: Fiscal Year:		: Fiscal Year:		: Fiscal Year:		: Fiscal Year:		: Fiscal Year:		: Fiscal Year:		: Fiscal Year:		: 6-Yr. Prog.		: and Funds Required	
	: TOTAL	: Cont. Programs:	: Funds	: Funds	: Funds	: Funds	: Funds	: Funds	: Funds	: Funds	: Funds	: Funds	: Funds	: Funds	: Funds	: Funds	: 1950 - 1955	: after FY 1955	: (dollars)	: (dollars)
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Missouri	---	130,000	20,000	25,000	45,000	55,000	90,000	90,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000	580,000				
Iowa	---	3,000	400	500	1,400	1,500	2,000	2,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	13,900				
Minnesota																				
Kansas																				
Nebraska																				
South Dakota	---	9,000	7,000	7,000	7,000	8,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	51,000				
North Dakota	---																			
Montana	---	36,000	6,000	11,000	11,000	21,500	31,000	31,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	171,500				
Wyoming	---	12,000		3,000	3,000	4,000	8,000	8,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	51,000				
Colorado	---	10,000	6,600	7,600	7,600	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	57,600				
TOTAL	---	200,000	40,000	44,800	75,000	100,000	150,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	925,000				



PRIVATE FORESTRY COOPERATION, TREE PLANTING ON STATE AND PRIVATELY-OWNED LAND

Forest Service

I. Objective:

To produce and distribute some 565 million tree seedlings over a six-year period for planting on poorly stocked and denuded private forest areas, on other land unsuitable for agriculture or pasture, and in shelterbelts and windbreaks where needed.

This applies not only to forest products, but to related values such as water, forage, wildlife, recreation and soil erosion prevention as well. Lands unsuitable for crops and pastures can be put to work if planted to trees. Existing windbreaks and shelterbelts need maintenance and many new ones should be planted to afford protection to farmsteads and fields.

II. Problems:

Much of the privately owned woodland is producing only one-third to one-half of its potential capacity.

III. Significance:

The replanting of poor forest areas, the planting

IV. Plan of Work:

The tree planting program on private lands will be carried on as a cooperative endeavor with the state forestry agencies. Ordinarily the state forestry department will grow and distribute the trees while the

of new forests, shelterbelts and windbreaks, and sufficient tree seedlings to maintain plantations should failures occur will contribute economic and physical benefits of significance to the Missouri Basin.

Table 8. ESTIMATED NEEDS (NUMBER OF TREE SEEDLINGS) 1/

STATE	: Total Needs : Annual Needs : Accom- : : for Non-Cont. : for Cont. : pishment : : Program : Program : FY 1948 : FY 1949 : (thousands) (thousands) (thousands) (thousands)	Estimated Needs by Fiscal Year					: Total Esti- : Total Requirements : mated Needs : : 1950-1955 : after : (thousands) (thousands)					
		1950	1951	1952	1953	1954	1955	1950-1955	1955			
Missouri	1,000,000	---	1,200	2,000	7,500	10,000	12,500	20,000	27,500	37,500	115,000	885,000
Iowa	125,000	---	250	500	1,700	2,500	3,000	5,000	7,500	10,000	29,700	95,300
Minnesota	17,000	---	---	---	1,000	1,500	2,000	2,500	5,000	5,000	17,000	---
Kansas	170,000	---	800	1,000	2,000	3,000	3,500	7,500	5,000	10,000	31,000	139,000
Nebraska	1,148,000	---	1,300	1,500	6,000	7,500	10,000	20,000	27,500	37,500	108,500	1,039,500
South Dakota	400,000	---	600	800	4,300	5,500	6,800	15,000	22,500	30,000	84,100	315,900
North Dakota	418,000	---	500	600	4,300	5,500	6,700	15,000	22,500	30,000	84,000	334,000
Montana	90,000	---	250	750	1,200	1,500	2,000	5,000	12,500	20,000	42,200	47,800
Wyoming	33,000	---	100	100	500	1,000	1,000	5,000	7,500	10,000	25,000	8,000
Colorado	290,000	---	180	200	1,500	2,000	2,500	5,000	7,500	10,000	28,500	261,500
TOTAL	3,691,000	---	5,180	7,450	30,000	40,000	50,000	100,000	145,000	200,000	555,000	3,126,000

1/ Table also reflects number of acres for tree planting at 1,000 trees per acre.



PRIVATE FORESTRY COOPERATION, TREE PLANTING ON STATE AND PRIVATELY-OWNED LAND, Continued

Forest Service

State Extension Service will instruct the land-

owner in proper methods of planting and in caring for the plantations, shelterbelts or windbreaks after they are established.

VI. Authorizations:  
Cooperative Farm Forestry Act of May 18, 1937 (Morris-Doxey).  
Section 4 of Clary-McNary Law, Act of June 7, 1924, 43 Statute 653,  
as amended.

V. Financial Requirements:

Table 9 shows the estimated cost of Federal participation in the cooperative tree planting program. The states will be expected to share fifty percent or more of the total cost of the work.

Table 9. ESTIMATED COST

STATE	: Estimated Cost :		: 1948 :		: 1949 :		Funds Required by Fiscal Years					: Total Est. Cost : Total Unshared. Cost	
	: Annual for : Fiscal Year :		: Fiscal Year :		: Fiscal Year :							: 6-Yr. Prog. : and Funds Req.	
	: TOTAL : Cont. Programs :	: Funds :	: Funds :	: Funds :	: 1950 :	: 1951 :	: 1952 :	: 1953 :	: 1954 :	: 1955 :	: 1950 - 1955 :	: after FY 1955 :	
(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	
Missouri	2,000,000	---	2,800	2,800	15,000	20,000	25,000	40,000	55,000	75,000	230,000	1,770,000	
Iowa	250,000	---	500	500	3,500	5,000	6,000	10,000	15,000	20,000	59,500	190,500	
Minnesota	34,000	---	---	---	2,000	3,000	4,000	5,000	10,000	10,000	34,000	---	
Kansas	340,000	---	1,000	1,000	4,000	6,000	7,000	15,000	20,000	20,000	72,000	268,000	
Nebraska	2,296,000	---	3,200	3,200	12,000	15,000	20,000	40,000	55,000	75,000	217,000	2,079,000	
South Dakota	800,000	---	2,400	2,400	8,500	11,000	13,500	30,000	45,000	60,000	168,000	632,000	
North Dakota	836,000	---	2,700	2,700	8,500	11,000	13,500	30,000	45,000	60,000	168,000	668,000	
Montana	180,000	---	1,000	1,000	2,500	3,000	4,000	10,000	25,000	40,000	84,500	95,500	
Wyoming	66,000	---	3,100	3,100	1,000	2,000	2,000	10,000	15,000	20,000	50,000	16,000	
Colorado	580,000	---	600	600	3,000	4,000	5,000	10,000	15,000	20,000	57,000	523,000	
TOTAL:	7,382,000	---	17,300	17,300	60,000	80,000	100,000	200,000	300,000	400,000	1,140,000	6,242,000	



PRIVATE FORESTRY COOPERATION, EDUCATIONAL AND TECHNICAL ASSISTANCE IN FORESTRY ON STATE AND PRIVATELY-OWNED LAND

Forest Service

I. Objective:

Educate and technically assist the private owners in the proper management of some 10,864,000 acres of commercial farm and non-farm forest land.

II. Problems:

Unfortunately, the privately owned woodlands have been treated worse than other forest land. Their rebuilding to provide a maximum of timber, water, forage, recreation, flood control, soil erosion prevention and wildlife values is essential.

III. Significance:

Privately owned forest lands are of first importance because they make up some of the best land for providing continuous crops of commercially valuable and readily accessible timber. Adequate protection and wise management will reflect favorably on the physical and economic well-being of the entire Missouri Basin and its people. The first to benefit from well managed private forests will be the owners themselves: more timber products for home use; more cash from increased sales; less erosion on the

land and more water for livestock and crops; and added pleasure from recreation and wildlife.

IV. Plan of Work:

The work of providing educational and technical assistance will be organized and carried out in cooperation with the existing state forestry agencies, ordinarily the State Extension Service and the State Forest Service.

Additional State Extension Foresters will educate the private owners to the need for better woodland

Table 10. ESTIMATED NEEDS, Acres of Private Commercial Forest, Farm and Non-Farm, to be Included in Program of Education and Technical Assistance in Woodland Management

STATE	Total Needs : Annual Needs : for Non-Cont. : Program : (acres)	Accom- : pishment : FY 1948 : (acres)	Accom- : pishment : FY 1949 : (acres)	Estimated Needs by Fiscal Years					Total Esti- : mated Needs : after	
				1950	1951	1952	1953	1954	1955	1955
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
Missouri	---	6,476,000	965,000	1,077,000	1,452,000	2,052,000	2,952,000	4,377,000	6,476,000	18,386,000
Iowa	---	450,000	---	15,000	50,000	150,000	250,000	350,000	450,000	1,265,000
Minnesota	---	13,000	---	2,000	4,000	6,000	8,000	10,000	13,000	43,000
Kansas	---	404,000	---	15,000	50,000	138,000	226,000	315,000	404,000	1,118,000
Nebraska	---	948,000	45,000	60,000	95,000	195,000	446,000	697,000	948,000	2,441,000
South Dakota	---	596,000	233,000	248,000	283,000	318,000	410,000	503,000	596,000	2,358,000
North Dakota	---	122,000	---	12,000	32,000	52,000	72,000	92,000	112,000	372,000
Montana	---	1,167,000	---	40,000	120,000	320,000	567,000	867,000	1,167,000	3,061,000
Wyoming	---	394,000	---	15,000	30,000	121,000	212,000	303,000	394,000	1,075,000
Colorado	---	304,000	60,000	75,000	120,000	166,000	212,000	258,000	304,000	1,135,000
TOTAL	---	10,864,000	1,303,000	1,559,000	2,236,000	3,518,000	5,355,000	7,772,000	10,864,000	31,304,000



PRIVATE FORESTRY COOPERATION, EDUCATIONAL AND TECHNICAL ASSISTANCE IN FORESTRY ON STATE AND PRIVATELY-OWNED LAND, Continued

Forest Service

management; instruct them in certain technical phases such as log scaling, tree measurement; and through group demonstrations create a desire for better management in the owner's individual forest.

The "farm forester" or "project forester", stationed on a definite woodland management project of from 75 to 100 thousand acres of private forest land, will go to the woods and help each individual owner put the foregoing teaching into actual practice. He will assist the owner in the preparation of a simple yet adequate management plan for the protection, growing and harvesting of the timber

crop. Since each private forest property is a special problem because of the variation in tree species, age, type condition and economic needs of the owner, the project forester will use his technical knowledge and skill to size up the particular forest property, make specific recommendations for its management, and advise and assist the owner in carrying them out. If the job warrants the employment of a private consulting forester and such are available, the project forester will recommend several qualified consulting foresters to take over where he leaves off. In such a plan of work, education and demonstration and actual in-the-woods technical assistance complement each other

in getting better woodland management on private lands.

V. Financial Requirements:

Table 11 shows the estimated cost of Federal share (50%) of the total cost of this work. It is expected that the states will provide an equal amount.

VI. Authorization:

Cooperative Farm Forestry Act of May 18,

1937 (Morris-Dorey). Section 5 of Clarke-McNary

Law, Act of June 7, 1924, 43 Statute, 653, amended.

Table 11. ESTIMATED FEDERAL COST

STATE	Estimated Cost		1948		1949		Funds Required by Fiscal Years								Total Est. Cost		Total Unabsorbed Cost	
	TOTAL	Annual for Cont. Programs	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	6-Yr. Prog. 1950 - 1955	and Funds Req. after FY 1955		
Missouri	---	246,100	13,400	13,400	13,400	13,400	18,400	33,400	59,700	98,500	159,800	246,100	615,900	---	---			
Iowa	---	41,500	4,000	4,000	4,000	4,000	6,500	11,500	19,000	26,500	34,000	41,500	139,000	---	---			
Minnesota	---	8,200	700	700	700	700	1,900	3,100	4,300	5,600	6,900	8,200	30,000	---	---			
Kansas	---	33,500	1,000	1,000	1,000	1,000	3,500	8,500	14,700	20,900	27,200	33,500	108,300	---	---			
Nebraska	---	58,500	6,000	6,000	6,000	6,000	8,500	13,500	21,000	33,500	46,000	58,500	181,000	---	---			
South Dakota	---	36,500	1,500	1,500	1,500	1,500	4,000	9,000	14,000	21,500	29,000	36,500	114,000	---	---			
North Dakota	---	15,500	1,700	1,700	1,700	1,700	3,000	5,500	8,000	10,500	13,000	15,500	55,500	---	---			
Montana	---	73,000	5,500	5,500	5,500	5,500	8,000	13,000	23,000	38,000	55,500	73,000	210,500	---	---			
Wyoming	---	25,800	800	800	800	800	3,300	5,800	10,800	15,800	20,800	25,800	82,300	---	---			
Colorado	---	26,700	5,400	5,400	5,400	5,400	7,900	11,600	15,300	19,100	22,900	26,700	103,500	---	---			
TOTAL	---	565,300	40,000	40,000	40,000	40,000	65,000	114,900	189,800	289,900	415,100	565,300	1,640,000	---	---			



# FLOOD CONTROL SURVEYS

## U. S. Department of Agriculture: Soil Conservation Service and Forest Service

### I. Objective:

The primary purpose of the Department's program of runoff and waterflow retardation and soil erosion prevention in aid of flood control is the reduction of flood damages caused by water and sediment. The work is conducted on a watershed basis. Survey reports describe watersheds, their condition, flood history and flood damages, and outline remedial watershed programs and present estimates of their costs and benefits.

### II. Problems:

The work is needed to bring about a maximum amount of watershed protection consistent with use and treatment capabilities and considering the need for production of food and fibre. The survey report is a step required by law to serve as a basis for action by Congress to authorize or decline to authorize a remedial program for a watershed.

### III. Significance:

The watershed improvement activities must be accelerated in the Missouri Basin to be integrated effectively with the construction of large mainstem detention reservoirs, levees, flood walls, cutoffs and other channel improvements which are a coordinate part of the entire flood control job in the Missouri

Basin. In many parts of the Basin, agricultural flood control is the only kind of flood control that can be made available.

### IV. Plan of Work:

The survey is the responsibility of the Secretary of Agriculture and is administered by the Forest Service and the Soil Conservation Service.

A survey report of the Missouri Basin will be completed by January 15, 1949. Cooperation with other

agencies operating in the Basin is provided for by the Federal Inter-Agency River Basin Agreement dated February 5, 1948.

### V. Financial Requirements:

Table 12 shows the estimated cost of the survey of the Missouri Basin, which will be completed by January, 1949. no estimate is included for 1950-55.

### VI. Authorization:

Public Law 739, 74th Congress, as amended.

Table 12. ESTIMATED COST

STATE	Total Funds Required	Funds Available for Fiscal Year 1948	Funds Available for Fiscal Year 1949
Missouri	272,000	129,000	143,000
Iowa	70,000	25,000	45,000
Minnesota	7,000	---	7,000
Kansas	101,000	26,000	75,000
Nebraska	191,000	62,000	109,000
South Dakota	103,000	28,000	75,000
North Dakota	62,000	---	62,000
Montana	115,000	17,000	98,000
Wyoming	95,000	20,000	75,000
Colorado	112,000	27,000	85,000
TOTAL	1,128,000	354,000	774,000



# FLOOD CONTROL - PROGRAM OF REMEDIAL MEASURES

U. S. Department of Agriculture: Soil Conservation Service and Forest Service

## I. Objective:

Following an investigation of flood damages and necessary treatment to get maximum damage reduction benefits, a program of measures and works of improvement will be placed on the land. It is the objective of this activity to place these needed measures on all of the land in the Missouri Basin-- some 339,000,000 acres.

## II. Problem:

Flood control starts where runoff begins. This activity named the "flood control job on the land"

includes treating the land and managing the water to obtain maximum infiltration, runoff retardation, and soil erosion prevention consistent with the use of the land and the water for production of crops, forage, wood and other products, and to help in the prevention of erosion. Excess waters need to be carried by protected waterways to stream channels. Small structures are required in critical areas to stabilize the water courses and creeks feeding into tributaries and to trap silt. Storage and protective measures in some cases will be required in

## III. Significance:

The watershed improvement activities must be accelerated in the Missouri Basin to be integrated effectively with the construction of large mainstem detention reservoirs, levees, flood walls, cutoffs and other channel improvements which are a coordinate part of the entire flood control job in the Missouri Basin. In many parts of the Basin, agricultural flood control

Table 13. ESTIMATED NEEDS, Acres to be Treated

STATE	: Total Needs : Annual Needs :		: Accom- : Accom- :		Estimated Needs by Fiscal Years						: Total Esti- :		Total Requirements :
	: for Non-Cont. : : for Cont. :	: for Cont. : : for Non-Cont. :	: Accom- : Accom- :	: Accom- : Accom- :	Estimated Needs by Fiscal Years						: Total Esti- :		
	: Program : (acres)	: Program : (acres)	: FY 1948 : (acres)	: FY 1949 : (acres)	: 1950 : (acres)	: 1951 : (acres)	: 1952 : (acres)	: 1953 : (acres)	: 1954 : (acres)	: 1955 : (acres)	: 1950-1955 : (acres)	: after 1955 : (acres)	
Missouri	26,230,000	---	---	---	304,000	356,000	444,000	660,000	892,000	892,000	3,548,000	22,682,000	
Iowa	12,953,000	---	281,000	368,000	308,000	325,000	285,000	276,000	183,000	183,000	1,560,000	10,744,000	
Minnesota	1,404,000	---	---	---	87,000	87,000	87,000	87,000	130,000	174,000	652,000	752,000	
Kansas	23,950,000	---	---	---	286,000	428,000	571,000	714,000	800,000	800,000	3,599,000	20,351,000	
Nebraska	49,059,000	---	---	---	355,000	440,000	638,000	1,489,000	2,043,000	2,043,000	7,008,000	42,051,000	
South Dakota	47,856,000	---	---	---	427,000	430,000	701,000	1,675,000	2,243,000	2,243,000	7,679,000	40,177,000	
North Dakota	39,768,000	---	---	---	228,000	225,000	302,000	1,361,000	2,150,000	2,150,000	7,016,000	32,752,000	
Montana	74,680,000	---	---	---	690,000	836,000	1,099,000	2,564,000	3,517,000	3,517,000	12,223,000	62,157,000	
Wyoming	42,076,000	---	---	---	367,000	449,000	610,000	1,423,000	1,951,000	1,951,000	6,751,000	35,325,000	
Colorado	18,365,000	---	---	---	130,000	140,000	265,000	617,000	846,000	846,000	2,844,000	15,521,000	
TOTAL	336,341,000	---	281,000	368,000	3,182,000	3,716,000	5,002,000	10,826,000	15,055,000	15,099,000	52,880,000	282,812,000	



# FLOOD CONTROL - PROGRAM OF REMEDIAL MEASURES, Continued

## U. S. Department of Agriculture: Soil Conservation Service and Forest Service

is the only kind of flood control that can be made available.

### IV. Plan of Works

Upon approval and authorization by the Congress of the general flood control program to be placed on the land (survey reports), the installation of the measures will proceed as rapidly as the combined resources of the land-owners and operators, the Federal government, respective soil conservation districts, and other local and State instrumentalities and agencies can be utilized effectively.

On private lands the watershed works and improvements are actually installed by landowners and operators with the help of their conservation districts through assistance made available by the Department of Agriculture and other agencies--local, State and Federal. The kind and amount of assistance made available by the Department is based on the public benefits to be derived and what is needed to achieve flood control objectives. Work on national forests and other public lands will be carried out by the agency responsible for their administration.

Table 13 indicates the job by State by year in terms of acres for the next 6 years. This work schedule, however, is entirely dependent on Congressional action following completion of the surveys.

### V. Financial Requirements:

The financial requirements necessary to follow the acre work schedule (Table 13) are set forth by State and year on Table 14.

VI. Authorization: Public Law 738, 74th Congress, as amended and supplemented.

Table 14. ESTIMATED COST

STATE	Estimated Cost		1948		1949		Funds Required by Fiscal Years							Total Est. Cost		Total Unexpd. Cost 6-Yr. Prog. 1950 - 1955 and Funds Req. after FY 1955 (dollars)
	Annual for Cont. Programs		Funds		Funds		Funds Required by Fiscal Years							Total Est. Cost		
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)		
Missouri	86,539,000	---	---	355,000	1,296,000	1,520,000	1,895,000	2,820,000	3,810,000	3,810,000	3,810,000	15,151,000	71,588,000			
Iowa	53,136,000	---	1,500,000	1,033,000	1,255,000	1,323,000	1,160,000	1,124,000	743,000	743,000	743,000	6,348,000	44,116,000			
Minnesota	1,695,000	---	---	---	100,000	100,000	100,000	100,000	100,000	150,000	200,000	750,000	936,000			
Kansas	71,253,000	---	---	167,000	837,000	1,255,000	1,673,000	2,091,000	2,343,000	2,343,000	2,343,000	10,542,000	60,711,000			
Nebraska	110,226,000	---	---	---	1,000,000	1,241,000	1,800,000	4,200,000	5,761,000	5,761,000	5,761,000	19,763,000	120,463,000			
South Dakota	86,951,000	---	---	---	760,000	766,000	1,247,000	2,911,000	3,992,000	3,992,000	3,992,000	13,668,000	73,283,000			
North Dakota	73,054,000	---	---	---	405,000	400,000	538,000	2,423,000	4,361,000	4,361,000	4,361,000	12,488,000	60,566,000			
Montana	67,774,000	---	---	---	600,000	727,000	956,000	2,231,000	3,060,000	3,060,000	3,060,000	10,634,000	57,140,000			
Wyoming	47,519,000	---	---	---	400,000	489,000	665,000	1,551,000	2,127,000	2,127,000	2,127,000	7,359,000	40,160,000			
Colorado	35,861,000	---	---	---	250,000	268,000	508,000	1,185,000	1,625,000	1,625,000	1,625,000	5,461,000	30,400,000			
TOTAL	644,008,000	---	1,500,000	1,555,000	6,903,000	8,089,000	10,542,000	20,636,000	27,972,000	28,022,000	28,022,000	102,164,000	559,193,000			



PROGRAM OF CONSERVATION APPLICATION (DISTRICT WORK--DRY LAND)

Soil Conservation Service

I. Objectives:

To stabilize agriculture and conserve the productivity of the soil by establishing necessary conservation measures. To provide for proper land use of all agricultural areas in the Basin.

There have been and currently are tremendous soil losses occurring in much of the Missouri Basin. Land is being robbed of its fertility; depositions from erosion cause widespread damage to bottom lands and crops, to highways and to drainage structures;

streams become contaminated, which in turn results

in siltation of reservoirs and contributes vastly to the damages of floods at great distances from the original resting place of the soil.

Conservation measures must eventually be applied to every acre. The degree of intensity of treatment and timing of application must be carried out in direct proportion to losses that have already occurred. The most critical need is to stabilize the areas that have had the greatest losses of production.

tive soil.

II. Problems:

The biggest problem is to get rapid application of permanent erosion control measures to prevent further soil losses. Supplementary conservation practices must be applied concurrently to improve the soils, to maintain and replace plant nutrients and conserve water. With an increasing population and a decreasing area of productive lands, immediate protection must be provided for the remaining lands devoted to agricultural production. The

Table 15 ESTIMATED NEEDS, Acres to be Treated

STATE	Total Needs : for Non-Cont. Program	Annual Needs : for Cont. Program	Accom- plishment : FY 1948	Accom- plishment : FY 1949	Estimated Needs by Fiscal Years						Total Requi- red Needs : 1950-1955	Total Requirements after 1955	
					1950	1951	1952	1953	1954	1955			
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
Missouri	---	---	62,000	277,000	384,000	481,000	737,000	948,000	962,000	3,803,000	22,297,000		
Iowa	---	---	127,000	137,000	190,000	239,000	345,000	478,000	478,000	1,887,000	10,833,000		
Minnesota	---	---	28,000	14,000	20,000	26,000	26,000	40,000	40,000	166,000	1,194,000		
Kansas	---	---	199,000	294,000	407,000	511,000	782,000	1,022,000	1,022,000	4,038,000	18,341,000		
Nebraska	---	---	327,000	381,000	512,000	611,000	990,000	1,338,000	1,335,000	5,164,000	39,334,000		
South Dakota	---	---	304,000	399,000	564,000	715,000	1,112,000	1,460,000	1,460,000	5,710,000	35,193,000		
North Dakota	---	---	361,000	499,000	533,000	692,000	806,000	1,222,000	1,222,000	4,989,000	29,795,000		
Montana	---	---	361,000	449,000	1,351,000	1,593,000	1,712,000	1,888,000	1,888,000	9,573,000	57,422,000		
Wyoming	---	---	80,000	155,000	604,000	765,000	1,164,000	1,553,000	1,553,000	6,089,000	34,120,000		
Colorado	---	---	47,000	61,000	234,000	406,000	622,000	812,000	812,000	3,210,000	12,705,000		
TOTAL	---	---	1,896,000	2,338,000	4,889,000	6,039,000	8,336,000	10,772,000	10,772,000	44,689,000	461,232,000		



PROGRAM OF CONSERVATION APPLICATION (DISTRICT WORK--DRY LAND), Continued

Soil Conservation Service

stabilization of soil also is a most important measure in establishing the permanence of the reservoir areas above the many water conservation and flood control dams proposed as a part of the plan of development and conservation of the natural resources of the Missouri Basin.	in the Missouri Basin, and every possible means must be used to conserve and develop it to its proper use.	six-year period are scheduled in Table 15.
III. <u>Significance:</u>	IV. <u>Plan of Work:</u>	V. <u>Financial Requirements:</u>
The Missouri Basin is one of the most productive agricultural areas in the world and although erosion is severe, it can be halted with modern conservation practices. The soil is the greatest natural resource	Work will be carried out through soil conservation districts as is now being done. Impetus to the application of conservation measures can be given to the more critical areas through increases of funds under the Missouri Basin plan. Application of flood control measures will also be of major value in establishing permanent erosion control. Accomplishments during the	The table of estimated cost (Table 16) is self-explanatory and indicates the funds necessary to accomplish the work planned for the various states in the Basin during the Six-Year Program from 1950 to 1955, inclusive.
	VI. <u>Authorization:</u>	
	Public Law 46, 74th Congress.	

Table 16. ESTIMATED COST

STATE	Estimated Cost		1948		1949		Estimated Funds Required by Fiscal Years								Total Est. Cost		Total Unshed. Cost	
	TOTAL	Annual for	Funds	Funds	1950	1951	1952	1953	1954	1955	1950 - 1955	1950 - 1955	6-Yr. Prog.	and Funds Required				
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)			
Missouri	71,003,000	---	174,000	190,000	776,000	1,074,000	1,347,000	2,063,000	2,694,000	2,694,000	2,694,000	2,694,000	10,648,000	59,991,000				
Iowa	42,741,000	---	435,000	365,000	470,000	650,000	820,000	1,251,000	1,640,000	1,640,000	1,640,000	1,640,000	6,471,000	35,470,000				
Minnesota	1,582,000	---	29,000	16,000	115,000	20,000	27,000	27,000	41,000	41,000	41,000	41,000	170,000	1,367,000				
Kansas	65,281,000	---	562,000	643,000	833,000	1,152,000	1,446,000	2,214,000	2,891,000	2,891,000	2,891,000	2,891,000	11,427,000	52,649,000				
Nebraska	116,769,000	---	847,000	971,000	988,000	1,327,000	1,583,000	2,565,000	3,457,000	3,457,000	3,457,000	3,457,000	13,377,000	101,574,000				
South Dakota	72,190,000	---	541,000	680,000	710,000	1,004,000	1,273,000	1,979,000	2,599,000	2,599,000	2,599,000	2,599,000	10,164,000	60,805,000				
North Dakota	60,708,000	---	624,000	864,000	890,000	949,000	1,197,000	1,394,000	2,114,000	2,114,000	2,114,000	2,114,000	8,658,000	50,562,000				
Montana	55,423,000	---	300,000	373,000	947,000	1,121,000	1,322,000	1,421,000	1,567,000	1,567,000	1,567,000	1,567,000	7,945,000	46,805,000				
Wyoming	38,380,000	---	79,000	154,000	426,000	598,000	757,000	1,172,000	1,537,000	1,537,000	1,537,000	1,537,000	6,027,000	32,120,000				
Colorado	22,960,000	---	70,000	91,000	346,000	479,000	601,000	920,000	1,202,000	1,202,000	1,202,000	1,202,000	4,750,000	18,049,000				
TOTAL	547,037,000	---	3,661,000	4,347,000	6,400,000	8,374,000	10,373,000	15,006,000	19,742,000	19,742,000	19,742,000	19,742,000	79,637,000	459,392,000				





# TECHNICAL SERVICE FOR DRAINAGE (WET LANDS), Continued

## Soil Conservation Service

### III. Significance:

Simply providing a channel for conducting surface water from wet lands to a lower elevation does not in most cases solve drainage problems. A complete inventory of conditions as they exist, and a determination of what they will be if drained is necessary. Solution of the problem must necessarily include consideration of the watershed above the wet land areas, and conservation treatment of such lands. The production of agricultural products on 2,000,000

acres of relatively fertile wet lands has great significance even on an area as large as the Missouri Basin.

### IV. Plan of Work:

Work will be carried out through the soil conservation districts and legally constituted drainage districts as is now being done. Additional technical personnel will be furnished to set up the planning and application of conservation measures in keeping with the program of agricultural levee construction

and other requirements with funds made available under the Missouri Basin Plan, with accomplishments as scheduled in Table 17.

### V. Financial Requirements:

The table of estimated cost (Table 16) is self-explanatory and indicates the funds necessary to accomplish the work planned for the various states in the Basin during the 6-Year Program, 1950-55, inclusive.

### VI. Authorizations:

Public Law 46, 74th Congress.

Table 16. ESTIMATED COST

STATE	Estimated Cost : Annual for : Fiscal Year : : Cont. Programs : (dollars) :	Funds Required by Fiscal Years					Total Est. Cost : Total Unshed. Cost	
		1949 : (dollars)	1950 : (dollars)	1951 : (dollars)	1952 : (dollars)	1953 : (dollars)	6-Yr. Prog. : 1950 - 1955 : (dollars)	and Funds Required : after FY 1955 : (dollars)
Missouri	3,384,000	---	19,000	230,000	251,000	287,000	290,000	1,635,000
Iowa	2,256,000	---	13,000	153,000	167,000	192,000	192,000	1,088,000
Minnesota	63,000	---	---	4,000	4,000	4,000	7,000	30,000
Kansas	752,000	---	---	31,000	34,000	39,000	39,000	221,000
Nebraska	1,128,000	---	---	76,000	83,000	95,000	95,000	539,000
South Dakota								
North Dakota								
Montana								
Wyoming								
Colorado								
TOTAL	7,583,000	---	31,000	484,000	539,000	617,000	623,000	3,513,000
								4,007,000

# TECHNICAL SERVICE FOR IRRIGATION AND DRAINAGE OF IRRIGATED AREAS IN SOIL CONSERVATION DISTRICTS

## Soil Conservation Service

### I. Objective:

There is a total potential of approximately 11,200,000 acres of irrigated land in the Missouri Basin. Of this amount, presently developed areas account for 4,676,500 acres. Under the present plans for new development of irrigated lands, as presented by the Bureau of Reclamation, an additional 4,760,400 acres are designated. This figure does not account in full for the potential pump irrigation and the need for supplementary irrigation in some of the more humid areas of the lower Basin which in the future will be developed as insurance against prolonged dry periods. Sprinkler systems, with pumping either from wells or streams, will add considerably to the grand total. It is anticipated that approximately 1,760,000 acres in addition to the areas already publicized will be developed for irrigation by private individuals and small groups in the Basin, bringing the total of present and potential to the figure of 11,200,000 acres.

The objective is to get complete conservation measures on all irrigated lands with primary attention given to the water requirements of crops, methods of application, maintenance of fertility and disposal of excess water. This will require the furnishing of the necessary technical assistance for planning of presently irrigated areas, proposed new areas, individual pump irrigation developments, and group feasibility. To achieve the maximum results, a complete physical inventory of the land must be made, including not only soils information, surface and subsurface, but also complete topographic data.

### II. Problems

Irrigation farming, in addition to inducing widespread erosion, brings new problems that have not always been anticipated in the past. Tremendous amounts of water are lost through inadequately designed or protected conveyance channels. Water lost in transit from the source not only reduces the amount available at the farm, but also jeopardizes the adjacent lands by causing large

seep and marshy areas. Immense drainage systems have become an after-thought in the development of irrigation projects and large areas of good productive land have become so waterlogged and impregnated with chemical salts as to be considered worthless. Losses in canals are daily partially responsible for the creation of drainage problems. Too little knowledge of the water requirements of crops, careless application of water, poorly designed farm irrigation layouts, lack of proper land preparation and other errors on the part of individual irrigators have contributed to the waste of water and damage to land.

### III. Significance:

The results of improper selection of lands for irrigation, the lack of drainage provisions, the lack of precautions to prevent seepage from canals and laterals, and improper application of water are apparent in practically all irrigation projects as evidenced by an increasing acreage of abandoned land.



# TECHNICAL SERVICE FOR IRRIGATION AND DRAINAGE OF IRRIGATED AREAS IN SOIL CONSERVATION DISTRICTS, Continued

## Soil Conservation Service

In other words, just putting land under irrigation does not insure permanent productive capacity.

On lands already irrigated, every possible conservation measure must be used in preventing further damage and reduction of tillable acreage.

In new areas proposed for irrigation, a complete analysis of the results of application of water must be made in advance of the actual choice of lands to

be irrigated. The error of applying irrigation water to lands not suitable for irrigation must not be made in the future. The latter statement applies particularly to lands in the semi-humid areas in the eastern half of the Missouri Basin where good crop production is normal without irrigation.

In a coordinated plan to develop and conserve the natural resources of the Missouri Basin, every

precaution must be taken to make our agricultural lands permanently productive.

Table 19. ESTIMATED NEEDS, Acres to be Treated

STATE	Total Needs : Annual Needs : Acreage : : for Non-Cont. : for Cont. : plishment : : Program : Program : FY 1948 : (acres) (acres) (acres)		Estimated Needs by Fiscal Years : 1950 : 1951 : 1952 : 1953 : 1954 : (acres) (acres) (acres) (acres) (acres)					Total Esti- : Total Requirements : mated Needs : : 1950-1955 : (acres) (acres)		
Missouri										
Iowa										
Minnesota										
Kansas	---	---	1,200	1,600	1,800	2,300	3,400	5,400	19,900	412,700
Nebraska	---	---	56,000	65,000	88,000	104,000	169,000	228,000	882,000	988,000
South Dakota	---	---	10,000	13,000	19,000	24,000	36,000	48,000	188,000	1,109,000
North Dakota	---	---	6,000	7,000	8,000	10,000	12,000	22,000	81,000	1,191,000
Montana	---	---	51,000	66,000	104,000	132,000	173,000	193,000	861,000	1,746,000
Wyoming	---	---	38,000	39,000	43,000	57,000	81,000	131,000	482,000	790,000
Colorado	---	---	24,000	33,000	36,000	48,000	69,000	111,000	408,000	1,160,000
TOTAL	---	---	186,200	224,600	299,800	377,300	543,400	738,400	2,921,900	7,396,700

## Soil Conservation Service

#### IV. Plan of Work:

Work will be carried out through the soil conservation districts as it is being done at the present time. Additional technical personnel will be furnished to step up the planning and application of conservation measures in accordance with funds made available to this activity.

## V. Financial Requirements:

The table of estimated cost (Table 2D) is self-explanatory and indicates the funds necessary to accomplish the work planned for the various States in the Basin during the Six-Year Program, from 1950 to 1955, inclusive.

## VI. Authorization:

Public Law 46, 74th Congress.

Table 20.

STATE	Estimated Cost		Estimated Funds Required by Fiscal Years					Total Est. Cost				
	: TOTAL (dollars)	: Annual for Funds : (dollars)	: Fiscal Year : Fiscal Year :					: Total Unshed. Cost : and Funds Req. : after FY 1955 (dollars)				
			1948	1949	1950	1951	1952		1953	1954	1955	
			(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Missouri												
Iowa												
Minnesota												
Kansas	2,969,000	---	8,000	8,000	11,000	12,000	16,000	23,000	37,000	37,000	136,000	2,817,000
Nebraska	13,015,000	---	363,000	416,000	424,000	569,000	678,000	1,099,000	1,482,000	1,482,000	5,734,000	6,502,000
South Dakota	7,959,000	---	60,000	76,000	79,000	112,000	142,000	220,000	290,000	290,000	1,133,000	6,690,000
North Dakota	7,970,000	---	40,000	40,000	43,000	47,000	61,000	77,000	135,000	135,000	498,000	7,392,000
Montana	15,866,000	---	299,000	373,000	382,000	609,000	768,000	1,008,000	1,127,000	1,127,000	5,021,000	10,173,000
Wyoming	8,374,000	---	238,000	238,000	245,000	266,000	353,000	506,000	816,000	816,000	3,002,000	4,896,000
Colorado	17,300,000	---	256,000	274,000	352,000	387,000	513,000	734,000	1,185,000	1,185,000	4,356,000	12,144,000
TOTAL	73,453,000	---	1,264,000	1,425,000	1,536,000	2,002,000	2,531,000	3,667,000	5,072,000	5,072,000	19,880,000	50,884,000



## SNOW SURVEYS

### Soil Conservation Service

#### I. Objectives:

The purpose of this study would be the determination of water supplies stored on watersheds in the form of snow, and to relate such snow water storage to subsequent runoff into streams and reservoirs. A further purpose would be determination and evaluation of factors influencing the relationship between snow cover and stream discharge. A major and final object would be perfection of plans for quickly obtaining and making available to all water users in the Basin, or to agencies concerned with water planning or use, findings as to snow cover and forecasts of stream flow.

#### II. Problems:

Skeletonized snow surveys now exist on most major tributaries of the Missouri River. Earliest snow survey records in this Basin date to 1919, but records at 90 percent of existing snow courses began only in 1936 or later. Snow surveys providing only a generalized picture of snow conditions in more accessible parts of the elevated northerly and westerly portions of the Missouri Basin have been possible with funds provided to date. These surveys are providing a general guide

to water supply annually in prospect to the largest reservoirs or to the more prominent units of irrigated land, and to some established hydro-power generating units.

Extension of the snow survey network is needed to make possible more detailed and reliable forecasts of stream flow to existing projects and to smaller sub-stream basins. Such extension is particularly needed into least accessible mountainous regions where surveys are incomplete because of lack of proper mechanized snow travel equipment. Such equipment for reaching isolated watershed locations now is available.

#### III. Significance:

To meet the requirements of individual farmers or groups of farmers organized in irrigation, soil conservation and other districts, there is a particular need for water supply forecasts designed to serve as aids in planning land and water use and cropping programs on land units of all sizes and classes, extending from the headwaters meadow or hay lands to crop lands of major valleys below.

Extension of the snow survey network also is needed to make possible in the future detailed and reliable

forecasts of stream flow to water control and water use projects not yet constructed. At least ten seasons of records on snow courses are required to provide a reliable index to stream flow; therefore, it is important that snow surveys be initiated several years prior to construction of such water control or water use units.

#### IV. Plan of Work:

Planning of the extended snow course network will first require analysis by sub-basins of existing snow survey records to determine the degree of correlation each year between measured snow and resultant stream flow. These analyses will be basic to preparation of forecast curves for each sub-basin. In carrying forward these analyses, consideration will need to be given to effects upon the basic snow-cover runoff relationship of departures from normal during the runoff season, of temperature, precipitation and other climatic factors, together with ground water variations on the watersheds. Analyses of these data as they exist, or as they need determination, for the principal sub-basins of the Missouri Basin will require not less than 10 man-years of technical and clerical time.

# SNOW SURVEYS, Continued

## Soil Conservation Service

Such review of data is basic to planning economical and proper installation of additional snow courses, as may be found necessary, on all of the subdrainage basins throughout the Missouri River Basin.

As these analyses go forward, less technician time and money will be required for the planning of a comprehensive snow survey network, but equivalent time and monies will be required for actually effective field installations of snow courses, for securing the necessary

records thereon or supplementary thereto, and for interpreting the records in terms of needed forecasts. To this extent the project will pass largely from planning into operational phases within three or four years following its initiation.

The present policy of full cooperation, collection and unreserved interchange of data between SCS, Forest Service, the States and other agencies concerned with water use and control within the Missouri Basin will be maintained. Every possible means will be used to in-

sure procurement of snow survey and related data for the Bureau of Reclamation, the Corps of Engineers and other operating agencies as requested by them.

### V. Financial Requirements:

The following budget estimate sets forth personnel and operational needs that should be provided to put into effect this snow survey planning and operating project. (Table 21)

VI. Authorization: Public Law 146, 74th Congress.

Table 21. ESTIMATED COST

STATE	Estimated Cost		Funds Required by Fiscal Year		Total Est. Cost					
	1948	1949	1950	1951	1952	1953	1954	1955	6-Yr. Prog. 1950--1955	Total Unabsorbed Cost and Funds Req. after FY 1955
(dollars)										
Missouri	---	---	---	---	---	---	---	---	---	---
Iowa	---	---	---	---	---	---	---	---	---	---
Minnesota	---	---	---	---	---	---	---	---	---	---
Kansas	---	---	---	---	---	---	---	---	---	---
Nebraska	---	---	---	---	---	---	---	---	---	---
South Dakota	---	---	---	---	---	---	---	---	---	---
North Dakota	---	---	---	---	---	---	---	---	---	---
Montana	---	---	---	---	---	---	---	---	---	---
Wyoming	---	---	---	---	---	---	---	---	---	---
Colorado	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---



## RESEARCH ON CONSERVATION TREATMENT OF LAND

### Soil Conservation Service

#### I. Objective:

The objectives of the research program dealing with conservation treatment of land are to improve the technique of applying conservation practices, and increase and improve the fund of knowledge conducive to (a) getting proper land use, (b) decreasing runoff and soil loss, (c) maintaining soil fertility, (d) flood prevention, and (e) protection of structures by decreasing siltation.

#### II. Problems:

The types of research would include the following:

1. Methods of reducing water and wind erosion losses in agricultural areas of the Missouri Valley--
- (a) relation between different climatic factors and soil losses; (b) factors affecting infiltration and methods of increasing intake over entire watersheds;
- (c) estimation of runoff from different soils and crop conditions as part of the Missouri Valley program; (d) methods of reducing surface runoff which might affect water levels in reservoirs, and the siltation in reservoirs.

2. Preserving good land from deterioration, by

wind or water erosion, overflow and improper management.

3. Rejuvenating eroded land or improving land normally low in productive capacity.

4. Determination of intake of water, runoff and evaporation losses under different land uses.

5. Determination of land areas most logically adapted to permanent vegetation--grass, trees, etc.

6. Utilization of soil conservation crops by livestock, in manner to give most profit to farmer and at same time preserve productive capacity of land.

7. Study of crops of various types for use on eroded soils in various parts of the Missouri Basin and methods of curbing further erosion by either water or wind while producing these crops.

8. Study of soils with different land use capabilities to determine range of crop adaptation. Also, determine how crop production of each class can be altered by applying soil and water conservation practices.

9. Investigations of types of machinery for use in carrying out soil and water conservation farming operations.

#### III. Significance:

Without adequate research on which to base the action program, watershed treatment, erosion prevention and fer-

tility maintenance cannot be properly instituted. Soil losses, loss of organic matter and fertility is proceeding at an alarming rate throughout most of the Missouri Basin. These fundamental resources must be maintained if a permanent agriculture is to be instituted.

Agriculture in the Missouri Basin is relatively new, and much information of a research nature is needed to guide the conservation program in such a manner as to make it effective and prevent the wasting of Federal and private funds. Investigations and research in each of the problem areas are essential and must be carried out in each area and State. Where site conditions are different within the Basin, there is a wide variation in soil and climatic conditions requiring numerous research locations.

#### IV. Plan of Work:

The conservation research will be carried out in such a manner as to prevent duplication, and to insure the greatest degree of integration and cooperation possible. The present system of Soil Conservation Service Research working closely

RESEARCH ON CONSERVATION TREATMENT OF LAND, Continued

Soil Conservation Service

Research funds need to be allocated on a continuing basis with adequate flexibility for proper administration.

V. Financial Requirements:

VI. Authorization:

Public Law 46, 74th Congress. (Research)

The financial requirements for conservation research are set forth in Table 22. These estimates are considered as minimum requirements.

Table 22. ESTIMATED COST

STATE	Estimated Cost		1948		1949		Funds Required by Fiscal Years						Total Est. Cost		Total Unshed. Cost	
	: Annual for		: Fiscal Year:		: Fiscal Year:		: Fiscal Years						: Six-Year Program		: and Funds Req.	
	: TOTAL	: Cont. Programs	: Funds	: Funds	: Funds	: Funds	: 1950	: 1951	: 1952	: 1953	: 1954	: 1955	: 1950 - 1955	: after FY 1955		
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	
Missouri	1,721,000	---	18,000	25,000	86,000	115,000	143,000	171,000	171,000	171,000	171,000	171,000	857,000		864,000	
Iowa	1,605,000	---	19,000	29,000	83,000	106,000	130,000	153,000	153,000	153,000	153,000	153,000	778,000		827,000	
Minnesota																
Kansas	1,036,000	---	---	---	49,000	70,000	90,000	112,000	112,000	112,000	112,000	112,000	545,000		491,000	
Nebraska	1,091,000	---	25,000	30,000	95,000	127,000	158,000	189,000	189,000	189,000	189,000	189,000	947,000		954,000	
South Dakota	1,307,000	---	6,000	7,000	62,000	88,000	116,000	142,000	142,000	142,000	142,000	142,000	692,000		615,000	
North Dakota	860,000	---	7,000	7,000	41,000	58,000	75,000	92,000	92,000	92,000	92,000	92,000	450,000		410,000	
Montana	838,000	---	6,000	6,000	59,000	84,000	110,000	136,000	136,000	136,000	136,000	136,000	661,000		177,000	
Wyoming	737,000	---	7,000	7,000	35,000	50,000	64,000	78,000	78,000	78,000	78,000	78,000	388,000		354,000	
Colorado	705,000	---	4,000	---	35,000	47,000	59,000	72,000	72,000	72,000	72,000	72,000	357,000		348,000	
TOTAL	10,710,000**	---	92,000	111,000	545,000	745,000	945,000	1,145,000	1,145,000	1,145,000	1,145,000	1,145,000	5,670,000		5,040,000 *	

\* Total expenditure for ten years after 1955, or until 1965.

\*\* Funds needed for sixteen-year period.



# IRRIGATION, DRAINAGE AND SEDIMENTATION RESEARCH IN THE MISSOURI BASIN

## Soil Conservation Service

### I. Objective:

(1) Determination of irrigation water requirements for farm, ranch and maintain meadow conditions; (2) methods of water application to soil; (3) removal of excess water on irrigated land; (4) study of water supply sources; (5) drainage of wet and overflow land; (6) determination of rates, seasonal frequency, the causal factors of sedimentation, and methods of controlling sediment in channels and reservoirs.

### II. Problem:

The broad problem is that of making the best use of available soil and water resources. Other problems are those

of excessive water use, soil deterioration, erosion, salinity and the reduction of crop yields. Factual information will be secured with regard to sedimentation cause and control.

### III. Significance:

Results of the work when given widespread application will reduce water losses, soil erosion, salinity and other deterioration of soil, increase crop yields, and save farm labor.

### IV. Plan of Work:

A staff of research technicians qualified in these fields

### VI. Authorization:

will be established in cooperation with the State Agricultural Experiment Station in each of the States of the Basin where

Table 23 shows budget necessary for

research.

Public Law 46 (Research), 74th Congress.

these problems are important factors. This staff of technicians should explore problem areas and develop for the site conditions at hand the methods and practices necessary for a maximum utilization of the soil and water resources involved.

### V. Financial Requirements:

Table 23. ESTIMATED COST

STATE	Estimated Cost : TOTAL: Annual for : Cont. Programs:	Funds Required by Fiscal Years					Total Est. Cost		Total Unshed. Cost : and Funds Req. : after FY 1955 *
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	6-Yr. Prog. : 1950 - 1955	(dollars)	
Missouri	744,000	---	---	21,000	39,000	45,000	65,000	65,000	444,000
Iowa	599,000	---	---	32,000	38,000	43,000	68,000	47,000	324,000
Minnesota									
Kansas	591,000	---	---	29,000	59,000	49,000	49,000	60,000	285,000
Nebraska	1,621,000	---	17,000	77,000	95,000	125,000	135,000	146,000	897,000
South Dakota	1,215,000	---	---	62,000	92,000	101,000	112,000	112,000	624,000
North Dakota	926,000	---	---	40,000	51,000	63,000	97,000	97,000	481,000
Montana	1,028,000	---	3,000	50,000	67,000	84,000	98,000	97,000	535,000
Wyoming	947,000	---	---	51,000	68,000	85,000	79,000	79,000	506,000
Colorado	812,000	---	9,000	21,000	44,000	51,000	70,000	70,000	471,000
TOTAL	8,483,000	---	29,000	103,000	398,000	646,000	773,000	773,000	4,567,000

\* Total expenditure for ten years after 1955, or until 1965.

\*\* Funds needed for sixteen-year period.

# LAND USE ADJUSTMENT PROJECTS WITHIN THE MISSOURI BASIN

## Soil Conservation Service

### I. Objectives:

There are eighteen Land Utilization Projects within the Missouri Basin in which the Soil Conservation Service administers 4,664,000 acres of government owned lands. Virtually all of the acquired land is considered as submarginal for cash crop production and, to the extent they have been farmed, should be retired to grazing use. Conservation measures which should be applied include reseeding abandoned crop lands to adapted grasses, construction of livestock facilities such as water, fence, corrals, etc., and the grazing of all lands under a sound plan of controlled grazing, use and management. Economic adjustments in size of operating units are being made so the remaining operators will have sufficient land resources to permanently operate successfully as livestock units.

### II. Problems:

These projects were started in 1934 and 1938. After the land was acquired, a development program was initiated and has continued each year, but appropriations for that purpose have not been sufficient to complete the necessary conservation measures. The re-vegetation program is nearly complete in all areas

but there still remains other conservation measures which must be completed before the lands can be fully utilized for grazing purposes. Unwatered range needs to have watering facilities installed, such as dams, springs and wells, and unfenced areas must be fenced for more successful livestock operations and conservation use of the range under a program of controlled grazing. Over-grazing which existed in the Thirties' has virtually been eliminated. Conservation use of these lands in the future include range condition classifications and utilization studies under which rate of stocking is held consistent with the annual grazing capacity of the range. The Soil Conservation Service, acting as landlord on behalf of the Government, with trained land management personnel, will provide technical supervision for the conservation use and management of the acquired land for which qualified personnel must be supplied.

### III. Significance:

Although only 4,664,000 acres have been acquired by the Federal government within existing projects, the land is intermingled with various other ownerships such as private, State, county, corporate, etc.

As a result of the influence exerted in the use and management of the acquired land, controlled grazing is secured on an estimated total area of about 20 million acres. The conservation use of these lands through retirement from cultivation and proper stocking will become of major significance to the Missouri Basin development program.

The land owned by the Soil Conservation Service is distributed by States as follows:

State	Acres
Missouri	13,000
Nebraska	134,000
South Dakota	854,000
North Dakota	997,000
Montana	1,920,000
Wyoming	544,000
Colorado	202,000
<b>TOTAL</b>	<b>4,664,000</b>

The land is located mostly in the semi-arid sections of the Great Plains area. Nearly all the soils in these areas are heavy, comparatively low in fertility, and have a low rate of water infiltration. Being susceptible to droughts, they experience wide extremes in vegetative cover. Because of these factors, the percentage of runoff during heavy rain storms is



LAND USE ADJUSTMENT PROJECTS WITHIN THE MISSOURI BASIN, Continued

Soil Conservation Service

comparatively high and they are subject to severe erosion. Retirement from cultivation and maintaining as much vegetation on the land as possible through conservation use and management will reduce the amount of silt carried from these lands into stream channels. The rate of sedimentation of primary and secondary reservoirs constructed on the Missouri River and its tributaries will thereby be measurably reduced.

IV. Plan of Work:

The work will be accomplished by the Soil Conservation Service.

V. Financial Requirements:

It is anticipated the development program for all

vation Service with funds allocated each year for management, administration and conservation of the acquired lands. As rapidly as possible, the land will be leased to local livestock associations for use by their members. Technical advice and supervision will be made available to such associations in their general program of management and administration of the land to protect the Government's interests in the property.

VI. Authorization:

Title III, Bankhead-Jones Farm Tenant Act.

projects will be completed by the end of fiscal year 1952. Legislation under which the lands were acquired and are being administered prohibits their sale into private ownership. Funds requested for each year subsequent to fiscal year 1952 is the estimated cost to the Government for continued management and maintenance. (Table 24)

Table 24. ESTIMATED COST

STATE	TOTAL (dollars)	Estimated Cost		1948		1949		Funds Required by Fiscal Year		1954		1955		Total Est. Cost		Total Unatched. Cost	
		Annual for Cont. Programs	Fiscal Year	Funds	(dollars)	Funds	(dollars)	1950	1951	1952	1953	1954	1955	1950 - 1955	1950 - 1955	6-yr. Prog. and Funds Req. after FY 1955	(dollars)
Missouri	525,000	---	22,000	---	---	---	---	53,000	53,000	53,000	52,000	52,000	52,000	315,000	210,000		
Iowa																	
Minnesota																	
Kansas																	
Nebraska	150,000	---	9,000	---	7,000	---	---	8,000	8,000	8,000	7,000	7,000	7,000	45,000	91,000		
South Dakota	820,000	---	47,000	---	45,000	---	---	45,000	45,000	40,000	40,000	40,000	40,000	250,000	480,000		
North Dakota	825,000	---	35,000	---	45,000	---	---	45,000	45,000	45,000	40,000	40,000	40,000	255,000	480,000		
Montana	1,360,000	---	49,000	---	70,000	---	---	85,000	85,000	75,000	65,000	65,000	65,000	440,000	780,000		
Wyoming	410,000	---	19,000	---	24,000	---	---	24,000	24,000	24,000	20,000	20,000	20,000	132,000	230,000		
Colorado	240,000	---	10,000	---	12,000	---	---	10,000	10,000	10,000	9,000	9,000	9,000	57,000	159,000		
TOTAL	4,330,000	---	191,000	---	203,000	---	---	270,000	270,000	255,000	233,000	233,000	233,000	1,494,000	2,430,000		

# WATER CONSERVATION AND UTILIZATION--CASE-WHEELER

## Soil Conservation Service

### I. Objectives:

Seven irrigation projects within the Missouri Basin which have been designated as Case-Wheeler Projects are to be completed. These are now at various stages, some only beginning and some practically completed. The objectives of the Department of Agriculture, as set forth in the Case-Wheeler Act, are: (1) To arrange for settlement of projects on a sound agricultural basis; (2) to extend guidance and services to settlers thereon in matters of farm practice, soil conservation and efficient land use; (3) to acquire agricultural lands within the boundaries of such projects; (4) to arrange for the improvement of lands within project boundaries, including clearing, leveling and preparing them for the distribution of irrigation water. Congressional action will be necessary if additional projects are designated for development under this authority.

### II. Problems:

Complete settlement and immediate utilization of the project lands and irrigation facilities are impracticable without proper preparation of the land for irri-

gation farming. On these projects, this work is done prior to settlement and sale in family-size farms.

Where this is done, all the irrigable lands are quickly brought into production. Without such participation by the Department of Agriculture, many irrigation projects have required 25 to 50 years for complete settlement and crop utilization. Completion of these projects is a commitment of the Department of Agriculture for which legislative and presidential approval have been granted.

### III. Significance:

These projects are a large scale demonstration in which the Bureau of Reclamation and the Soil Conservation Service have had an opportunity to cooperatively develop irrigation projects. The value of a complete physical inventory of the land and soils, the anticipation of conditions that will exist after irrigation water is applied, and the sub-division of land to effect the most complete utilization of a land area have been and are being demonstrated on Case-Wheeler projects. It is highly significant in future development of the Missouri Basin, since the pattern has been established which would appear to be highly successful as a guide for the development of irri-

gation systems and the preparation and settlement of lands for irrigation for the entire Missouri Basin development plan.

### IV. Plan of Work:

Completion of the Case-Wheeler projects requires no new organization, but a continuation and completion of the work presently organized in project offices, administratively responsible to the regional office of the Soil Conservation Service. Each project requires careful, cooperative planning with the Bureau of Reclamation in the preparation of lands and construction of the irrigation system. As development and sales are completed on the projects now well advanced, it is planned to expand in other project areas where work was curtailed during the war. This will permit continued and advantageous use of experienced personnel with a minimum of overhead and training expense. Some additional authorization and funds may be needed to carry out the approved program to completion. Plans and estimates presented here are for completion of previously approved projects. New work authorized by Congress



WATER CONSERVATION AND UTILIZATION PROGRAM--CASE-WHEELER, Continued

Soil Conservation Service

would call for a comparable expansion of activities.

V. Financial Requirements:

Estimated Costs are distributed by years and by states on Table 25. Farmers will repay, to the government, the actual cost of land acquisition, land leveling, and installing farm irrigation systems in the amount set up in each project authorization. Costs of administration, technical services in inves-

tigation, planning and development, surveys and sales, guidance and services extended to settlers, are not included in the farmer's repayment obligation. The average required reimbursability is 42 percent of total costs. The price of completed farms to be sold is determined by earning capacity appraisal. Actual sales of developed farms are returning more than the reimbursable requirement to the government.

VI. Authorizations:

The Case-Wheeler Act, as amended (Public Law 398, 76th Congress, Chapter 717, 1st Session, S. 1802).  
Water Conservation and Utility Projects (Department of the Interior Appropriation Act, 1940; 53 Statute 685).

Table 25. ESTIMATED COST

STATE	Estimated Cost		1948		1949		Funds Required by Fiscal Years					Total Est. Cost		Total Unshed. Cost
	TOTAL	Cont. Programs	Funds	(dollars)	Funds	(dollars)	1950	1951	1952	1953	1954	1955	6-Yr. Prog. 1950-1955	
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Missouri														
Iowa														
Minnesota														
Kansas														
Nebraska 1/	160,000	---	80,000	35,000	15,000	15,000	15,000	15,000	15,000	15,000	150,000	45,000	---	
South Dakota 2/	2,675,000	---	9,000	12,000	330,000	630,000	850,000	525,000	150,000	90,000	2,575,000	79,000		
North Dakota 3/	182,000	---	32,000	13,000	80,000	20,000	15,000	15,000	15,000	15,000	130,000	7,000		
Montana 4/	339,000	---	126,000	83,000	45,000	35,000	25,000	25,000	25,000	25,000	130,000	---		
Wyoming														
Colorado														
TOTAL	3,356,000	---	247,000	143,000	470,000	700,000	905,000	565,000	150,000	90,000	2,880,000	86,000		

1/ Mirage Flats Project  
2/ Angostura and Rapid Valley Projects

3/ Buford-Trenton Project  
4/ Buffalo Rapids, Intake and Dodson Pump Projects

AGRICULTURAL CONSERVATION PROGRAM

Production and Marketing Administration

I. Objective:

The objective of the Agricultural Conservation

Program is to conserve and improve soil, to make better agricultural use of water, to conserve and improve range and farm woodland, and to aid in the making of necessary land use adjustments, the protection of watersheds and flood prevention. It offers financial assistance to farmers for carrying out needed conservation measures, designed to establish and maintain conservation systems of farming and to obtain conservation over and above that which would be obtained without such assistance.

The Program implements programs of other agencies, especially those of the Soil Conservation Service, Forest Service and Extension Service, by providing farmers with financial assistance for putting into effect conservation measures. The financial assistance covers only a part of the costs of the measures; the balance is borne by the farmer.

Any landlord, tenant or sharecropper who participates in the operation of the farm is eligible for

assistance under the Program, except for certain Government owned lands.

II. Problems:

The success of the Missouri Basin development is dependent upon the conservation, restoration and development of the farm and range resources of the area. One of the major problems arises from the large number of individually operated farms on which measures must be taken to maintain or increase soil productivity, control and prevent erosion caused by wind and water, conserve and result in better agricultural use of water, and conserve and improve range and farm woodland. The steps which must be taken to accomplish these objectives are dependent on farmer's understanding of the problems and need for conservation, knowledge of the best methods to be followed, interest in and desire for accomplishing conservation, and, of great importance, their financial ability to carry out the work. The Agricultural Conservation Program helps materially in financing the activities and contributes greatly to interest in conservation and stimulation of farmers' desire to carry out conservation measures.

Through it a means is provided by which each farmer can move forward step by step in an orderly program of conservation for his farm. It is in the national interest to move forward with the work on each farm as rapidly as possible and to share the costs of conservation measures which have public benefits.

III. Significance:

In the comprehensive Missouri Basin development the program will be of special significance in sharing the cost and speeding up the application of watershed treatment measures which must be carried out if the fullest benefits are to be realized from major storage structures. The assistance to irrigation farmers in land leveling, construction of ditches and other irrigation structures will be of great significance both to present and proposed irrigation development.

IV. Plan of Work:

The Program is developed and carried out through elected farmer committees. These committees are practical operating farmers. With their experience and knowledge of local conditions, they call on the



AGRICULTURAL CONSERVATION PROGRAM, Continued  
PRODUCTION AND MARKETING ADMINISTRATION

experiment stations and other agencies in the development of the Program. In every State a technical committee composed of representatives of all agencies interested in conservation advises the State committee in connection with the selection of adapted practices and formulation of specifications therefor. The measures

\* \* \* \* \*

for which assistance is offered in any county are those selected by the county committee with the approval of the State committee. The practices for which aid is given on each individual farm are those selected by the farmer with the approval of the County Committee. They represent an orderly approach to the conservation needs of each farm.

These committees - community, county and

State - provide a mechanism for quickly and effectively reflecting the views of farmers and for planning and operating the program so that needed adjustments can be made quickly and with practical administration by placing responsibility and democratic opportunities for initiative and action to a great degree at the local, county and State levels. Considerable administrative latitude is granted to committees in adapting practices and rates of assistance to fit local conditions and get the greatest benefits from the funds expended.

Table 26. NUMBER OF FARMERS PARTICIPATING IN THE AGRICULTURAL CONSERVATION PROGRAM <sup>1/</sup>

STATE	Accomplishment Fiscal Year 1948 (number)	Accomplishment Fiscal Year 1949 <sup>2/</sup> (number)	Estimated Accomplishment Fiscal Year 1950 (number)
Missouri	82,216	74,000	82,000
Iowa	60,009	54,000	60,000
Minnesota	6,589	5,900	6,600
Kansas	39,779	36,000	40,000
Nebraska	98,593	88,000	99,000
South Dakota	37,084	33,000	37,000
North Dakota	43,050	39,000	43,000
Montana	13,725	12,000	14,000
Wyoming	6,383	5,800	6,400
Colorado	11,424	11,000	11,000
TOTAL	398,852	358,700	399,000

<sup>1/</sup> All farms in the Basin area have need for conservation. The number actually participating in the period 1951-1955 will depend to a great degree upon the amount of available appropriation.

<sup>2/</sup> Rough approximation based on assumption that participation under 1948 program will be approximately 90 percent of that under the 1947 program.

AGRICULTURAL CONSERVATION PROGRAM, Continued  
Production and Marketing Administration

V. Financial Requirements:

The estimated funds required for the Agricultural Conservation Program are shown in Table 27. The payments for the 1947 and 1948 programs are indicated in Columns 3 and 4. In Column 5, a rough approximation of the payments which might be expected under the 1949 program (to be made in fiscal year 1950), based on a

total appropriation of \$262,500,000, has been entered. The annual ACP assistance needed for fiscal years 1951 to 1955 has been based on State committee estimates of the conservation measures needed. The annual needs for the years 1951 to 1955 will be approximately the same each year since the need for most annual practices will occur each year, and the permanent practices are included

on an annual basis, assuming about twenty years for completion.  
VI. Authorization:  
Soil Conservation and Domestic Allotment Act and Agricultural Adjustment Act of 1938, as amended and supplemented.

Table 27. ESTIMATED FUNDS NEEDED FOR THE AGRICULTURAL CONSERVATION PROGRAM, Missouri Basin Portion of Each State

STATE	Estimated Cost : Annual for : Fiscal Year : : Fiscal Year : : Fiscal Year : : Fiscal Year : : Fiscal Year :	1948 : Funds 1/ : (dollars)	1949 : Funds 1/ : (dollars)	Funds Required by Fiscal Years					1955 2/ : (dollars)	1954 2/ : (dollars)	1953 2/ : (dollars)	1952 2/ : (dollars)	1951 2/ : (dollars)	1950 1/ : (dollars)	Total Est. Cost: Tot. Unached. : 6-Year Program : Cost & Funds : 1950 - 1955 : Req. after '55 : (dollars)
				1950 1/ : (dollars)	1951 2/ : (dollars)	1952 2/ : (dollars)	1953 2/ : (dollars)	1954 2/ : (dollars)							
Missouri	---	23,700,000	6,300,000	2,600,000	23,700,000	23,700,000	23,700,000	23,700,000	23,700,000	23,700,000	23,700,000	23,700,000	23,700,000	131,700,000	---
Iowa	---	12,700,000	3,300,000	1,400,000	12,700,000	12,700,000	12,700,000	12,700,000	12,700,000	12,700,000	12,700,000	12,700,000	12,700,000	70,900,000	---
Minnesota	---	1,000,000	400,000	200,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	6,000,000	---
Kansas	---	20,300,000	4,600,000	2,300,000	20,300,000	20,300,000	20,300,000	20,300,000	20,300,000	20,300,000	20,300,000	20,300,000	20,300,000	113,600,000	---
Nebraska	---	22,800,000	8,100,000	3,600,000	22,800,000	22,800,000	22,800,000	22,800,000	22,800,000	22,800,000	22,800,000	22,800,000	22,800,000	132,500,000	---
South Dakota	---	17,500,000	5,400,000	2,800,000	17,500,000	17,500,000	17,500,000	17,500,000	17,500,000	17,500,000	17,500,000	17,500,000	17,500,000	101,700,000	---
North Dakota	---	12,800,000	5,600,000	2,300,000	12,800,000	12,800,000	12,800,000	12,800,000	12,800,000	12,800,000	12,800,000	12,800,000	12,800,000	75,900,000	---
Montana	---	10,100,000	3,400,000	1,600,000	10,100,000	10,100,000	10,100,000	10,100,000	10,100,000	10,100,000	10,100,000	10,100,000	10,100,000	58,900,000	---
Wyoming	---	4,900,000	1,700,000	800,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	28,500,000	---
Colorado	---	6,100,000	1,800,000	800,000	6,100,000	6,100,000	6,100,000	6,100,000	6,100,000	6,100,000	6,100,000	6,100,000	6,100,000	34,600,000	---
TOTAL	---	131,900,000	40,600,000	18,400,000	131,900,000	131,900,000	131,900,000	131,900,000	131,900,000	131,900,000	131,900,000	131,900,000	131,900,000	754,300,000	---

1/ Does not include cost of administration. (1950 based on \$262,500,000 appropriation.)  
2/ Preliminary estimates: An allowance for the cost of administration is included.  
3/ Estimated annual cost during the period 1956 to 1969.



# WATER FACILITIES LOAN PROGRAM

Farmers Home Administration

## I. Objectives:

To provide for loans to establish domestic and irrigation water facilities, such as wells, ponds, ditches, irrigation wells and many other purposes. Loans will be made to mutual water companies to build irrigation systems or to rehabilitate old ones.

## II. Problems:

The Water Facilities Program is designed to assist the development of "small irrigation"--individual farm

systems, or systems for a small group of farms. Such work is generally not included in the large projects. In the past, somewhat more land has been developed under small irrigation than under the large irrigation projects. In addition to assistance needed in small irrigation, there is a problem of securing satisfactory domestic and stock water supplies in many areas. In some areas, this problem has been so acute that it affects the welfare of the farm family and

definitely affects their success at farming. In other cases, the shortage of domestic and stock water may be only an inconvenience, but, in all cases, it is costly to the farm operation. A greatly increased demand for water facility loans is anticipated as major projects are constructed. In the past, many families on Reclamation projects have applied for water facility loans.

## III. Significance:

The comprehensive development of the Missouri Basin

Table 28. ESTIMATED NEEDS, Water Facilities Loans Including Pumps Financed by REA

STATE	: Total Needs : Annual Needs : Accom- : for Non-Cont. : for Cont. : plishment : : Program : FY 1948 : FY 1949 : FY 1950 : FY 1951 : FY 1952 : FY 1953 : FY 1954 : FY 1955 : Total Esti- (number) (number) (number) (number) (number) (number) (number) (number) (number) mated Needs : : after : 1950 - 1955 : (number) (number)		Total Requirements : after : 1950 - 1955 : (number) (number)									
	(number)	(number)		(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)	(number)
Missouri												
Iowa												
Minnesota												
Kansas	33	41	305	355	496	567	547	532		2,822		
Nebraska	46	60	656	764	1,069	1,222	1,222	1,145		6,078		
South Dakota	19	24	617	718	1,000	1,149	1,149	1,177		5,810		
North Dakota	10	13	515	600	840	960	960	900		4,775		
Montana	72	90	1,005	1,168	1,635	1,869	1,869	1,752		9,298		
Wyoming	59	74	582	677	948	1,083	1,083	1,015		5,388		
Colorado	47	60	235	273	382	436	436	409		2,171		
TOTAL	286	362	3,915	4,555	6,370	7,286	7,286	6,930		36,342		

# WATER FACILITIES LOAN PROGRAM, Continued

## Farmers Home Administration

involves not only the large projects, but assistance to small groups and individual farm irrigation developments as well as provision of a satisfactory domestic and farmstead water supply. Many farmers have resources or credit available to them to make these developments; others must rely on credit and technical assistance from the Water Facilities Program. To

carry out a balanced development program in the Missouri River Basin, funds must be provided so that these small developments keep pace with the major construction projects.

### IV. Plan of Work:

The Water Facilities Program is carried out through the national, State and county offices of the Farmers

Home Administration. Technical personnel would need to be increased to carry out the expanded program.

### V. Financial Requirements:

Table 29 indicates the loan funds. These funds are to be repaid with interest.

### VI. Authorization: Pope-Jones Act, 1937, as amended.

Table 29. ESTIMATED FUNDS. WATER FACILITIES LOANS

STATE	Estimated Cost : 1948 : 1949 :		Funds Required by Fiscal Years					Total Est. Cost : Total Unexpd. Cost	
	TOTAL : Annual for : Fiscal Year : Fiscal Year :	Funds : Funds :	1950 : 1951 : 1952 : 1953 : 1954 : 1955 :	(dollars)	(dollars)	(dollars)	(dollars)	6-Yr. Prog. : and Funds Required	1950 - 1955 : after FY 1955
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Missouri									
Iowa									
Minnesota									
Kansas	35,980	44,952	335,000	390,000	516,000	624,000	624,000	585,000	3,104,000
Nebraska	52,431	65,538	722,000	840,000	1,176,000	1,344,000	1,344,000	1,260,000	6,686,000
South Dakota	20,878	26,097	679,000	790,000	1,106,000	1,264,000	1,264,000	1,185,000	6,288,000
North Dakota	11,508	14,385	567,000	660,000	924,000	1,056,000	1,056,000	990,000	5,253,000
Montana	79,184	98,980	1,105,000	1,285,000	1,799,000	2,056,000	2,056,000	1,927,000	10,228,000
Wyoming	65,325	81,656	640,000	745,000	1,043,000	1,191,000	1,191,000	1,117,000	5,927,000
Colorado	52,098	65,122	258,000	300,000	420,000	480,000	480,000	450,000	2,388,000
TOTAL	317,404	396,730	4,306,000	5,010,000	7,014,000	8,015,000	8,015,000	7,514,000	39,874,000



# PRODUCTION AND SUBSISTENCE LOANS FOR LOW-INCOME FARM FAMILIES

## Farmers Home Administration

### I. Objectives:

To provide low-income farm families with financial assistance in obtaining necessary operating equipment and operating capital, and to provide guidance in carrying out of sound farm operation.

because sufficient credit is not available to them at prevailing rates and terms through the usual credit sources. In addition, many farm families with inadequate land and operating capital are definitely in the low-income group and need both guidance and credit to enable them to achieve sound operations and an adequate standard of living. In the Missouri Basin, the number of families needing this type of credit will increase

### II. Problems:

Many young veterans and young married farm families desiring to remain in agriculture are unable to do so

because of the development program. Many tenant farmers located in areas to be acquired for reservoirs will need assistance in relocating. Others will require assistance to get started on irrigation farms.

III. Significance:

As the Missouri Basin development moves forward, its full benefits will be achieved by assisting farm families to make the necessary adjustments and to take

Table 30

## ESTIMATED NEEDS, PRODUCTION AND SUBSISTENCE LOANS FOR LOW-INCOME FARM FAMILIES

STATE	Total Needs : Annual Needs :		Accom- : Accom- :		Estimated Needs by Fiscal Years					Total Esti- : Total Requirements		
	Program : (number)	for Non-Cont. : (number)	plishment : (number)	plishment : (number)	1950 : (number)	1951 : (number)	1952 : (number)	1953 : (number)	1954 : (number)	1955 : (number)	1950 - 1955 : (number)	after 1955 : (number)
Missouri	7,605		497	621	1,880	2,594	4,273	5,225	7,605	7,605	29,182	
Iowa	3,384		195	242	792	1,116	1,872	2,304	3,384	3,384	12,852	
Minnesota	514		37	46	130	178	290	354	514	514	1,980	
Kansas	3,990		271	338	990	1,365	2,210	2,710	3,990	3,990	15,315	
Nebraska	6,150		451	564	1,518	2,097	3,148	4,022	6,150	6,150	23,385	
South Dakota	3,686		545	681	974	1,313	2,104	2,556	3,686	3,686	14,319	
North Dakota	3,364		436	545	988	1,289	1,978	2,374	3,364	3,364	13,357	
Montana	2,075		497	621	802	962	1,333	1,545	2,075	2,075	8,792	
Wyoming	978		459	573	498	558	698	778	978	978	4,488	
Colorado	1,414		324	405	502	616	882	1,034	1,414	1,414	5,862	
TOTAL	33,160		3,712	4,636	9,074	12,088	19,118	22,932	33,160	33,160	129,532	

PRODUCTION AND SUBSISTENCE LOANS FOR LOW-INCOME FARM FAMILIES, Continued

Farmers Home Administration

advantage of the opportunities that the development program presents.

IV. Plan of Works

The program will be carried out through the national, State and county offices of the Farmers

Home Administration. Additional technical personnel would be required for the expanded program.

repaid with interest.

VI. Authorizations

V. Financial Requirements

The funds for production and subsistence loans are indicated in Table 31. These funds are to be

Farmers Home Administration Act of 1946.

Table 31. Estimated Funds, Production and Subsistence Loans for Low-Income Farm Families

STATE	Estimated Cost : TOTAL (dollars)	Fiscal Years					Funds Required by Fiscal Years			Total Est. Cost	
		1948	1949	1950	1951	1952	1953	1954	1955	1950-1955 (dollars)	6-Yr. Prog. 1950-1955 (dollars)
Missouri	19,012,000	1,213,268	1,554,085	4,702,000	6,487,000	10,682,000	13,062,000	19,012,000	19,012,000	72,957,000	
Iowa	8,461,000	487,137	605,921	1,981,000	2,791,000	4,681,000	5,761,000	8,461,000	8,461,000	32,136,000	
Minnesota	1,286,000	92,673	115,841	326,000	446,000	726,000	886,000	1,286,000	1,286,000	4,956,000	
Kansas	9,976,000	676,783	845,978	2,475,000	3,413,000	5,601,000	6,851,000	9,976,000	9,976,000	38,292,000	
Nebraska	15,375,000	1,127,900	1,409,870	3,794,000	5,243,000	8,620,000	10,055,000	15,375,000	15,375,000	58,462,000	
South Dakota	9,215,000	1,362,669	1,703,336	2,434,000	3,283,000	5,260,000	6,390,000	9,215,000	9,215,000	35,797,000	
North Dakota	8,411,000	1,090,629	1,363,286	2,470,000	3,222,000	4,946,000	5,936,000	8,411,000	8,411,000	33,396,000	
Montana	5,187,000	1,242,221	1,552,776	2,006,000	2,405,000	3,332,000	3,862,000	5,187,000	5,187,000	21,979,000	
Wyoming	2,445,000	1,446,932	1,442,662	1,245,000	1,396,000	1,746,000	1,946,000	2,445,000	2,445,000	11,223,000	
Colorado	3,535,000	810,626	1,013,282	1,255,000	1,540,000	2,205,000	2,565,000	3,535,000	3,535,000	14,655,000	
TOTAL	82,903,000	9,280,838	11,598,037	22,688,000	30,226,000	47,799,000	57,334,000	82,903,000	82,903,000	323,653,000	



# FARM OWNERSHIP LOANS

## Farmers Home Administration

### I. Objectives:

To promote farm ownership by making loans and insuring mortgages to enable eligible farm families to acquire, enlarge or improve family-type farms.

### II. Problems:

One of the goals of American agriculture is the operator-owned family-type farm. The Farm Ownership loan program was authorized in the Bankhead-Jones

Farm Tenant Act of 1937 to help farm tenants become owners. This program has been in successful operation in the Missouri Basin for ten years. The development of the Missouri Basin, involving construction of over one hundred reservoirs and shifting thousands of large dry land farms to smaller irrigation units, poses difficult adjustment problems to the farm people involved. Many families moving from

reservoir areas or attempting to establish new farms in irrigated areas will need credit for purchase of land. Those families who cannot obtain credit from the usual sources will need access to the type of credit extended through this program.

### III. Significance:

While the need for assistance in establishing farm ownership exists in all parts of the country,

Table 32. ESTIMATED NEEDS, Number of Farm Ownership Loans

STATE	Total Needs: Annual Needs:		Accomplishment:		Estimated Needs by Fiscal Years					Total Estimated Needs:	
	for Non-Cont. Program (number)	for Cont. Program (number)	for FY 1948 (number)	for FY 1949 (number)	1950 (number)	1951 (number)	1952 (number)	1953 (number)	1954 (number)	1955 (number)	after 1955 (number)
Missouri	125		210	293	310	324	353	353	425	425	2,190
Iowa	196		150	187	142	148	162	162	196	196	1,005
Minnesota	32		135	168	22	23	25	25	32	32	199
Kansas	289		161	201	177	191	219	219	289	289	1,384
Nebraska	519		306	382	287	316	374	374	519	519	2,389
South Dakota	414		146	183	189	217	273	273	414	414	1,780
North Dakota	350		107	134	163	186	233	233	350	350	1,515
Montana	518		43	54	154	199	290	290	518	518	1,969
Wyoming	287		28	34	76	102	155	155	287	287	1,062
Colorado	152		41	51	66	77	98	98	152	152	613
<b>TOTAL</b>	<b>3,182</b>	<b>1,357</b>	<b>1,687</b>	<b>1,687</b>	<b>1,586</b>	<b>1,793</b>	<b>2,182</b>	<b>2,182</b>	<b>3,182</b>	<b>3,182</b>	<b>14,097</b>

# FARM OWNERSHIP LOANS, Continued

## Farmers Home Administration

there is a special problem in the Missouri Basin related to the comprehensive development program. If this program is to be carried out without undue hardships on established operators, and for maximum benefits to veteran and young farmers wishing to get established, then an expanded program of farm ownership loans will be needed in the Basin.	IV. Plan of Work:	V. Financial Requirements:
	The program will be carried out through the Farmers Home Administration and the local county advisory committees which have been established for this program. Additional appraisers, engineers and other technicians would be needed for the expanded program.	The funds for Farm Ownership Loans are indicated in Table 33. These funds are to be repaid with interest. Authorizations: Bankhead-Jones Farm Tenant Act of 1937. Farmers Home Administration Act of 1946.

Table 33. ESTIMATED FUNDS, FARM OWNERSHIP LOANS.

STATE	Estimated Cost		1948		1949		Funds Required by Fiscal Years								Total Est. Cost		Total Unshed.	
	Annual for		Fiscal Year		Fiscal Year		Funds								6-Yr. Prog.		and Funds Req.	
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	1950	1951	1952	1953	1954	1955	(dollars)	(dollars)	1950 - 1955	: after FY 1955		
Missouri	3,825,000	2,115,728	2,644,658	2,788,000	2,918,000	3,177,000	3,177,000	3,177,000	3,177,000	3,825,000	3,825,000	3,825,000	19,710,000					
Iowa	1,764,000	1,349,262	1,686,572	1,274,000	1,336,000	1,458,000	1,458,000	1,458,000	1,458,000	1,764,000	1,764,000	1,764,000	9,054,000					
Minnesota	284,000	1,211,675	1,514,585	198,000	208,000	230,000	230,000	230,000	230,000	284,000	284,000	284,000	1,434,000					
Kansas	2,598,000	1,450,285	1,812,855	1,590,000	1,716,000	1,968,000	1,968,000	1,968,000	1,968,000	2,598,000	2,598,000	2,598,000	12,438,000					
Nebraska	4,670,000	2,752,085	3,440,106	2,582,000	2,843,000	3,365,000	3,365,000	3,365,000	3,365,000	4,670,000	4,670,000	4,670,000	21,495,000					
South Dakota	3,729,000	1,317,246	1,646,556	1,698,000	1,952,000	2,460,000	2,460,000	2,460,000	2,460,000	3,729,000	3,729,000	3,729,000	16,028,000					
North Dakota	3,151,000	967,013	1,208,766	1,466,000	1,676,000	2,098,000	2,098,000	2,098,000	2,098,000	3,151,000	3,151,000	3,151,000	13,640,000					
Montana	4,664,000	388,815	486,018	1,387,000	1,788,000	2,609,000	2,609,000	2,609,000	2,609,000	4,664,000	4,664,000	4,664,000	17,721,000					
Wyoming	2,585,000	247,705	309,631	684,000	922,000	1,397,000	1,397,000	1,397,000	1,397,000	2,585,000	2,585,000	2,585,000	9,570,000					
Colorado	1,372,000	365,537	456,921	594,000	692,000	886,000	886,000	886,000	886,000	1,372,000	1,372,000	1,372,000	5,802,000					
TOTAL	28,642,000	2,165,351	15,206,668	14,261,000	16,051,000	19,648,000	19,648,000	19,648,000	19,648,000	28,642,000	28,642,000	28,642,000	126,892,000					

\*These estimates include both direct and insured mortgage loans.



## RURAL ELECTRIFICATION

### Rural Electrification Administration

#### I. Objectives:

The objective of the rural electrification program is to extend central station electric service to all farms and rural non-farm dwellings and establishments as rapidly as practicable and economically feasible.

#### II. Problem:

The aim is to provide rural America with the same conveniences and efficiencies for improving both the social and economic life of farmers that are enjoyed by most non-farm people in this country. A higher level of living and greater economic productivity for farm people are essential to the welfare and security of our Nation. To the extent that private investment has not provided the essential facilities for supplying electric service to rural areas, it is imperative that credit be extended to appropriately organized groups of farmers and other group interests to facilitate the extension of central station electric service to all rural areas.

#### III. Significance:

The REA program will continue to be one of extend-

ing credit and technical assistance to rural electric cooperatives, public power districts, municipalities and other power suppliers for the construction of facilities to service rural areas. More than 80 percent of the total loan program will be for distribution facilities, and unless private investment fails to expand generation and transmission facilities adequately not more than 10 percent of the total program will be for these purposes. The remaining 10 percent will be loaned for cooperative headquarters buildings, service and maintenance facilities, and for financing the wiring and plumbing (under Section V of the RE Act) of consumers' buildings.

On July 1, 1947, about 43 percent (248,000) of the 580,000 farms in the Missouri Basin States had central station electric service. Approximately half of this number (or 135,000) were receiving such service through REA borrower facilities. As of the same date, REA loans had financed the construction of approximately 70,000 miles of rural distribution lines in the Basin. Funds have already been provided for the construction of a substantially greater mileage.

According to Tables 34 and 35, loans in the total amount of \$130,000,000 during fiscal year 1948 will provide distribution facilities to serve more than 104,000 rural consumers, in addition to the improvement of existing facilities. Unless unforeseen developments occur, about \$174,000,000 will be available for loaning in the Basin States during 1949. This amount should provide service to more than 122,000 additional rural consumers.

#### IV. Plan of Work:

After 1949, the need for REA loans in the Basin States probably will diminish sharply to possibly \$75,000,000 in 1950, and \$25,000,000 by 1955. Thus, for the six years following 1949, it is possible that the need for rural electrification loans may be in the vicinity of \$233,000,000.

The amounts shown in Table 35 for the six-year period should be adequate to nearly complete the construction of primary facilities for rural electrification in the Basin States.

# RURAL ELECTRIFICATION, Continued

## Rural Electrification Administration

unless economic conditions and power supplies are unusually adverse.

Whether the construction program actually proceeds as rapidly as the loan program would permit depends on (a) the availability of materials and supplies, (b) the availability of adequate low-cost power to meet the rapidly growing consumption demands, and (c) the availability of adequate administrative funds for servicing the loans as rapidly as loan money is made available.

At the present time, the supply of power is generally short, and the completion of new generation capacity may be delayed beyond the dates originally set. For example, if certain large units that were scheduled for completion by 1951 or before are delayed until 1956 or later, the supply of power for rural lines probably will be generally inadequate.

The estimated costs involved in supplying central station electric service to the unserved consumers in the Basin states are based on current material and labor costs; consequently, they will vary depending on any

changes in the costs of these items over the period of the projected Six-Year Missouri Basin Program. Insofar as administrative costs are concerned, it is assumed that adequate funds will be made available by Congress. However, if the availability of administrative funds should lag behind, the loan program will be delayed accordingly. In visualizing the need for adequate administrative funds, as well as

loan funds, it is essential that it be recognized that the provision of rural electrification is one of building well-rounded utility systems. The construction of distribution lines is only one segment of the job. The provision of adequate rural electric service, however, is one of power supplies, distribution, consumer services, facility maintenance and plant management. It is extremely important that

Table 34. PRELIMINARY ESTIMATES OF CONSUMERS TO BE CONNECTED, 1948 and 1949

State	Estimated Connections to be Made from Funds for <sup>1/</sup>	
	1948 (number)	1949 (number)
Missouri	30,676	28,000
Iowa	9,783	10,000
Minnesota	15,722	16,500
Kansas	9,746	12,500
Nebraska	11,729	14,000
South Dakota	7,351	11,000
North Dakota	8,725	12,500
Montana	5,230	8,000
Wyoming	999	1,800
Colorado	4,803	8,000
TOTAL	104,764	122,300

<sup>1/</sup> Includes both farm and rural non-farm consumers. Estimates are for entire states rather than only those portions within the Missouri Basin. Estimates of consumers remaining to be served must await official determination to be made on basis of survey as of June 30, 1948.



# RURAL ELECTRIFICATION, Continued

## Rural Electrification Administration

this comprehensive viewpoint guides the REA program as it proceeds to serve rural America.

The planning of the extension of rural electrification to the Missouri Basin States as rapidly as practicable assumes that existing Federal laws, which give cooperatives and public bodies preference in the disposition of electric power generated by public

hydroelectric projects, will be continued. In making the most effective use of the power developed by both the Bureau of Reclamation and the Corps of Engineers projects, it is important that transmission facilities are provided so as to efficiently market the available power throughout the Missouri Basin area.

### V. Financial Requirements:

Table 35 shows estimated funds required for loans in the ten states wholly or partly in the Missouri Basin.

### VI. Authorization:

Rural Electrification Act of 1936, as amended.

Table 35. ESTIMATED FUNDS FOR RURAL ELECTRIFICATION ADMINISTRATION LOAN PROGRAM 1/

STATE	Estimated Cost		Fiscal Year		Funds		Funds Required by Fiscal Years		1954		1955		Total Est. Cost		Total Unexpended. Cost	
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Missouri	26,650,000	29,500,000	14,000,000	8,000,000	6,000,000	6,000,000	6,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	144,000,000	144,000,000		
Iowa	17,451,000	20,000,000	8,000,000	5,000,000	5,000,000	5,000,000	2,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	26,000,000	26,000,000		
Minnesota	16,371,000	22,000,000	9,000,000	6,000,000	5,000,000	5,000,000	6,000,000	4,000,000	4,000,000	3,000,000	3,000,000	3,000,000	33,000,000	33,000,000		
Kansas	12,158,000	17,500,000	7,000,000	5,000,000	4,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	25,000,000	25,000,000		
Nebraska	15,139,000	20,000,000	12,000,000	7,000,000	5,000,000	6,000,000	6,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	40,000,000	40,000,000		
South Dakota	12,443,000	20,000,000	8,000,000	3,000,000	2,500,000	2,500,000	2,500,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	20,000,000	20,000,000		
North Dakota	13,745,000	23,000,000	7,000,000	3,000,000	2,000,000	2,000,000	2,500,000	2,500,000	2,500,000	2,000,000	2,000,000	2,000,000	19,000,000	19,000,000		
Montana	6,759,000	9,000,000	4,000,000	2,000,000	1,500,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	10,500,000	10,500,000		
Wyoming	1,980,000	3,000,000	3,000,000	1,000,000	1,000,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	7,100,000	7,100,000		
Colorado	5,539,000	10,000,000	3,000,000	2,000,000	1,500,000	600,000	600,000	800,000	800,000	1,000,000	1,000,000	1,000,000	8,900,000	8,900,000		
<b>TOTAL</b>	<b>130,245,000</b>	<b>174,000,000</b>	<b>75,000,000</b>	<b>42,000,000</b>	<b>33,500,000</b>	<b>30,300,000</b>	<b>27,000,000</b>	<b>25,700,000</b>	<b>25,700,000</b>	<b>25,700,000</b>	<b>25,700,000</b>	<b>25,700,000</b>	<b>233,500,000</b>	<b>233,500,000</b>		

(These estimates are for entire states rather than only those portions within the Missouri Basin.)

**BASIC SOIL SURVEYS OF PRESENT AND PROPOSED IRRIGATION AREAS**  
Bureau of Plant Industry, Soils and Agricultural Engineering

**I. Objectives:**

To classify and map the soils on present or prospective irrigated areas.

us to know the kind of soil on which research work or farm experience has been gained so that we can tell where specific crops and practices hold promise.

**II. Problems:**

Soil surveys are needed not only to select land for irrigation, but are essential in determining the kind of crops, the method of irrigation, the kind of tillage practices, the character of fertility measures, the prevention of salt accum-

IV. Plan of Work:  
The work will be carried on in cooperation with the State Agricultural Experiment Stations. Generally, it will be undertaken first in the prospective irrigation areas, then in existing

Table 36. ESTIMATED NEEDS (AREAS TO BE COVERED BY SURVEYS)

STATE	Total Needs : Annual Needs : Accum- : Acres : : for Non-Cont. : for Cont. : plishment : plishment :		ESTIMATED NEEDS BY FISCAL YEARS										Total Esti- : Total Requirements	
	Program : (acres)	Program : (acres)	FY 1948 : (acres)	FY 1949 : (acres)	1950 : (acres)	1951 : (acres)	1952 : (acres)	1953 : (acres)	1954 : (acres)	1955 : (acres)	1956-1955 : (acres)	1955 : (acres)	after 1955 (acres)	
Missouri														
Iowa														
Minnesota														
Kansas	425,000	---	50,000	50,000	300,000	125,000	---	---	---	---	425,000	---	---	
Nebraska	915,000	---	---	---	200,000	200,000	150,000	65,000	---	---	915,000	---	---	
South Dakota	1,100,000	---	65,000	65,000	705,000	320,000	125,000	---	---	---	1,100,000	---	---	
North Dakota	1,595,000	---	---	65,000	705,000	510,000	190,000	190,000	---	---	1,595,000	---	---	
Montana	2,635,000	---	---	---	125,000	190,000	190,000	320,000	320,000	320,000	1,445,000	1,170,000	---	
Wyoming	1,625,000	---	20,000	---	---	160,000	320,000	190,000	190,000	125,000	985,000	640,000	---	
Colorado	1,335,000	---	---	---	---	---	320,000	125,000	125,000	125,000	695,000	640,000	---	
TOTAL	9,680,000	---	135,000	180,000	2,035,000	1,505,000	1,595,000	890,000	635,000	570,000	7,230,000	2,450,000	---	



BASIC SOIL SURVEYS OF PRESENT AND PROPOSED IRRIGATION AREAS, Continued  
Bureau of Plant Industry, Soils and Agricultural Engineering

VI. Authorization:  
Organic legislation, USDA.

The funds shown in Table 37 do not include expected contributions of State agencies. To the extent the States contribute, the work will proceed faster than is indicated in Table 36.

The estimates include amounts for drafting soil maps and publishing the maps and descriptive reports. Drafting and publication costs will lag one to three years after completion of field maps for any area.

irrigated areas. In areas of prospective irrigation, the mapping will be to specifications that will make it of maximum help to the Bureau of Reclamation or other agencies in classifying land for irrigation.

V. Financial Requirements:

Table 37 reflects the high priority given to proposed irrigation areas, particularly those in the eastern or sub-humid part of the Basin.

Table 37. ESTIMATED COST

STATE	Estimated Cost		1948		1949		Funds Required by Fiscal Years					Total Est. Cost : Total Unsched. Cost	
	TOTAL	: Annual for :Fiscal Year :Fiscal Year :	:Funds :	:Funds :	:Funds :	:Funds :	: 6-Yr. Prog. : and Funds Req. :			: 1950 - 1955 :	: after FY 1955 :		
							: 1950 :	: 1951 :	: 1952 :			: 1953 :	: 1954 :
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Missouri													
Iowa													
Minnesota													
Kansas	81,000	---	4,000	39,000	18,000	8,000	16,000	---	---	---	81,000	---	---
Nebraska	185,800	---	---	28,000	28,000	69,400	22,000	28,000	10,400	---	185,800	---	---
South Dakota	210,000	---	9,000	82,000	42,000	28,000	30,000	28,000	---	---	210,000	---	---
North Dakota	294,000	---	9,000	79,000	63,000	38,000	53,000	36,000	25,000	---	294,000	---	---
Montana	500,000	---	---	10,000	25,000	29,000	54,000	74,000	62,000	---	254,000	246,000	---
Wyoming	310,000	---	3,000	---	21,000	42,000	33,000	56,000	30,000	---	182,000	128,000	---
Colorado	260,000	---	---	---	---	42,000	38,000	26,000	26,000	---	132,000	128,000	---
TOTAL	1,840,800	---	14,000	238,000	197,000	256,400	246,000	248,000	153,400	---	1,338,800	502,000	---

Funds for 1948 and 1949 available under regular, not accelerated, program.

BASIC SOIL SURVEYS OF WATERSHED LANDS  
Bureau of Plant Industry, Soils and Agricultural Engineering

**I. Objectives:**

To classify and map the soils of non-irrigation areas having important problems of watershed management.

publish this depend much on the soil, hence it is important that the kind of soil be known.

**IV. Plan of Work:**

The work will be carried on in cooperation with

**III. Significance:**

**II. Problems:**

There is need to facilitate the production practices that will promote reduction of runoff, erosion, floods and sedimentation, and still afford adequate family living. Production practices that will accom-

The work will help farmers and their advisors to fit production practices to the particular kinds of soil. Experience gained or research carried out in one place will have prediction value for other places, by reason of knowing the kind of soil in each place.

the State agricultural experiment stations. Degree of detail will be in accord with the intensity of land use. Purely range and forest areas will be covered, in general, with reconnaissance-type surveys. Priorities will be determined mainly by acute-ness of need for adjustment in production practices and existence and adequacy of present soil maps.

**Table 38. ESTIMATED NEEDS (AREAS TO BE COVERED BY SURVEYS)**

STATE	Total Needs : for Non-Cont. : Program	Annual Needs : for Cont. : Program	Accom- : plishment : FY 1948	Accom- : plishment : FY 1949	Estimated Needs by Fiscal Year				Total Esti- : mated Needs : 1950-1955	Total Requirements : after : 1955
					1950	1951	1952	1953	1954	1955
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
Missouri	15,500,000	---	125,000	190,000	380,000	380,000	1,280,000	1,280,000	1,280,000	9,620,000
Iowa	6,920,000	---	30,000	125,000	250,000	255,000	385,000	385,000	385,000	4,875,000
Minnesota										
Kansas	10,065,000	---	80,000	80,000	80,000	640,000	1,600,000	1,665,000	1,000,000	12,920,000
Nebraska	7,150,000	---	115,000	115,000	115,000	---	640,000	1,065,000	895,000	2,585,000
South Dakota	37,310,000	---	---	---	---	1,600,000	800,000	2,130,000	1,500,000	30,000,000
North Dakota	22,575,000	---	---	---	---	125,000	1,725,000	1,725,000	2,000,000	15,000,000
Montana	30,480,000	---	---	---	---	1,725,000	1,725,000	1,280,000	2,250,000	20,000,000
Wyoming	32,120,000	---	---	---	---	320,000	1,000,000	3,000,000	4,300,000	20,000,000
Colorado	11,840,000	---	---	---	---	1,540,000	640,000	1,160,000	1,000,000	4,700,000
<b>TOTAL</b>	<b>182,960,000</b>	<b>---</b>	<b>350,000</b>	<b>510,000</b>	<b>825,000</b>	<b>6,505,000</b>	<b>9,795,000</b>	<b>13,690,000</b>	<b>14,770,000</b>	<b>119,890,000</b>

Accomplishments for 1948 and 1949 under regular, not accelerated, program.



BASIC SOIL SURVEYS OF WATERSHED LANDS, Continued  
Bureau of Plant Industry, Soils and Agricultural Engineering

Maps will be made so as to be of maximum help in developing farm plans for soil and moisture conservation. contributions of State agencies. To the extent that State agencies participate, the work will proceed faster than is indicated in Table 38.

V. Financial Requirements:

Costs vary according to character of country to be surveyed. Amounts for drafting of maps and publication of maps and reports are included. Drafting and publication costs will lag one to three years after completion of field maps for any area.

Organic legislation, USDA.

The funds shown in Table 39 do not include expected

Table 39. ESTIMATED COST

STATE	Estimated Cost		1948		1949		Funds Required by Fiscal Years					Total Est. Cost	
	TOTAL	Cont. Programs	Funds	Annual for Fiscal Year	Funds	Fiscal Year	1950	1951	1952	1953	1954	1955	6-Yr. Prog. : 1950 - 1955 : after FY 1955
Missouri	1,375,000	---	10,000	15,000	30,000	30,000	80,000	94,000	118,000	118,000	118,000	470,000	905,000
Iowa	520,000	---	2,500	8,500	18,500	20,000	34,000	38,000	50,000	54,000	54,000	214,500	305,500
Minnesota													
Kansas	1,543,000	---	6,500	6,500	45,000	45,000	64,000	90,000	128,000	137,000	137,000	470,500	1,072,500
Nebraska	413,800	---	8,500	8,500	---	---	32,000	67,800	57,400	98,600	98,600	264,300	119,500
South Dakota	2,679,000	---	---	---	35,000	35,000	76,000	127,500	122,000	151,000	151,000	511,500	2,167,500
North Dakota	1,615,000	---	---	---	10,000	10,000	87,000	81,500	100,500	128,000	128,000	407,000	1,208,000
Montana	1,100,000	---	---	---	35,000	35,000	35,000	48,500	75,000	106,000	106,000	299,500	800,500
Wyoming	690,000	---	---	---	7,000	7,000	28,000	46,000	61,000	114,000	114,000	256,000	434,000
Colorado	515,000	---	---	---	21,000	21,000	11,000	41,000	74,500	76,000	76,000	226,500	288,500
TOTAL	10,450,800	---	27,500	38,500	63,500	203,000	450,000	634,300	786,400	982,600	982,600	3,119,800	7,331,000

Funds available for 1948 and 1949 under regular, not accelerated, program.

## RESEARCH IN SOIL MANAGEMENT AND CROP PRODUCTION ON LANDS TO BE IRRIGATED

### Bureau of Plant Industry, Soils and Agricultural Engineering

#### I. Objective:

To carry on field investigations in crop adaptation, soil management and fertilization, soil-water-plant relationships, and production on representative soils in proposed irrigation areas.

#### II. Problems:

The introduction of irrigation into the central and eastern part of the Missouri Valley will create problems which have not been encountered in previous irrigation projects in the United States. Heretofore most of the irrigation has been confined to alluvial soils in arid climates with little soil profile development. Land leveling of such soils has not impaired their productivity as seriously as it will on the more fully developed soils in the subhumid climates, especially in the central and eastern part of the Missouri Basin where irrigation is not now generally practiced. A large part of the proposed irrigation is also on glacial soils where irregular or kettle hole topography will make distribution of water and surface drainage difficult. In the subhumid climate only a part of the water required for plant growth

needs to be supplied by irrigation because much of the moisture is provided by natural precipitation. Alternate wetting of soils with irrigation water containing soluble salts and with salt-free rain water will introduce problems of impaired soil tilth and reduced water infiltration. Maintenance of surface distribution systems under higher rainfall will also create problems.

With irrigation, the crops grown under dry farming must give way to those that yield much higher returns per unit area. Well established farming systems, cropping patterns, and customs will have to be changed and new skills developed in the conversion to irrigated farming.

#### III. Significance:

Irrigators cannot afford to use costly trial and error to ascertain best cropping systems and soil management practices. Well directed research will help farmers choose suitable crops and practices and thus shorten and facilitate adjustment to irrigation farming.

#### IV. Plan of Work:

A cooperative program of research in soil management and crop production similar to that now in progress in the Columbia River Basin should be initiated between the Department of Agri-

culture, the State experiment stations, and the Bureau of Reclamation. In this system, "central units," probably located at State experiment stations, consisting of a staff of technicians and laboratory sub-professional assistants, adequate laboratory facilities, and equipment should be provided in each State where major problems require investigation. At least the project leader should be a joint employee of the State and the Department, and other staff members as seems desirable. This group of technicians would conduct laboratory and field investigations.

Field tests would be located on "development" farms made available by the Bureau of Reclamation, the State experiment station, or by local arrangement on the major representative soil areas proposed for development. On these development farms sufficient acreage should be supplied for a representative farm unit operation and for carefully controlled plot work, thus bringing together on the same farm research plot work and farm-size operations. The operating staff of the development farm would consist



## Bureau of Plant Industry, Soils and Agricultural Engineering

The technical staff from the "central" unit in cooperation with State experiment station personnel would plan and conduct the research and field experiments.

To adequately cover major areas of representative soils more than one development farm would be needed in each State. A preliminary estimate indicates at least

of a farm operator and sufficient farm labor and equipment to operate the farm and handle the routine operations. Research by the Soil Conservation Service on irrigation methods will also be conducted on these predevelopment farms in close cooperation with the research described here.

Table 40. ESTIMATED NEEDS (Number of Research Units--Predevelopment Farms)

[illegible]

The cost for personnel, equipment and supplies for a "central" unit would be about \$75,000 for the first year and \$85,000 for succeeding years. The number of "central" units and their location will be determined cooperatively with the States. These

units would also obtain information applicable to small irrigation projects not developed by the Bureau of Reclamation, of which the total acreage is quite large.

The development farms might be operated most efficiently under State administration or by the Bureau of Reclamation. (It is estimated that it would cost

\$20,000 to \$25,000 to operate each of these. This cost is not included in the six-year estimates.)

## VI. Authorizations:

Organic legislation of the U. S. Department of  
culture.

Table 11. ESTIMATED COST

[illegible]



INCOME POTENTIALITIES OF FARMING, AND SIZES AND TYPES OF FARMS MOST LIKELY TO SUCCEED IN THE AREAS TO BE IRRIGATED AND IN THE AREAS TO BE PROTECTED FROM FLOOD HAZARDS

Bureau of Agricultural Economics

I. Objectives:

(a) To determine the systems of farming that are best suited to the areas to be irrigated or to be given flood protection in view of the soils, climate, topography, competitive and complementary relationships with other irrigated and non-irrigated areas of the West, foreseeable market opportunities, transportation facilities, freight rates, and the prevalence of established dry-land farms in those areas.

(b) To determine the optimum sizes of farms for the types that seem to be most feasible.

(c) To determine the most profitable enterprises and their desirable combinations in view of the prevalence of high-risk farming in surrounding areas.

(d) To determine production and income expectancies by sizes and types of irrigated farms that might be established; also as they might be affected by changes in flood protection areas. To be used as a basis for determining credit needs, settlement opportunities, service requirements, costs, benefits and repayment ability of farmers.

(e) To test out the feasibility of various enterprises and production practices that seem most

likely to succeed.

II. Problems:

Most of the irrigation development projected in the Missouri Basin lies in the sub-humid areas, where several years of high rainfall and good crops may come in succession and then be followed by severe drought. These areas are already being farmed in large units and with mechanized equipment. If irrigated farming is to succeed, it must be developed in sizes and types of farms and with practices that can compete successfully with dry-land farming—even in high rainfall years. Irrigation farming experience from arid and semi-arid areas cannot be transplanted to the semi-humid areas. Sizes and types of farms, farm practices and uses of water need to be developed to fit the sub-humid conditions.

III. Significance:

In any new irrigation project the failure or success which individual operators have, and in turn which the project itself will have, will in a large measure depend upon how well their farming systems are adjusted to the local environment and to market opportunities. The need for this study in the Missouri Basin is acute because the project is so large and there is a dearth of experience

in areas proposed for irrigation. The prevalence of established systems of dry-land farming in the areas to be irrigated will pose new problems in shifting to irrigation without an undue waste of productive resources.

IV. Plan of Work:

(a) Assemble available information regarding conditions that characterize each of the major irrigation areas that are proposed and for each of the flood protection areas.

(b) Assemble yield expectancy, farm organization, investment, costs and income data in established irrigated areas and interpret these for each of the major irrigation areas proposed in view of its environment.

(c) Simultaneously and in conjunction with the development of market outlook information, determine through an analysis of production and income expectancy data, and a consideration of market possibilities, those enterprises that seem to offer best opportunities.

(d) Determine the most advantageous combinations of enterprises, both irrigated and irrigated

INCOME POTENTIALITIES OF FARMING, AND SIZES AND TYPES OF FARMS MOST LIKELY TO SUCCEED IN THE AREAS TO BE IRRIGATED AND IN THE AREAS TO BE PROTECTED FROM FLOOD HAZARDS, Cont'd.

Bureau of Agricultural Economics

combined with dry land.

(e) Determine optimum sizes and numbers of farms of the various types that are likely to be most profitable.

(f) Assemble yield and income expectancies as a basis for appraising settlement opportunities, service requirements, cost-benefit relationships and repayment ability.

(g) For flood protection areas, assemble

data on frequency and extent of flood damages on yield expectancy, farm organization, costs and income.  
(h) The work will be carried out in cooperation with State Agricultural Experiment Stations, and other agencies, and will be integrated with other Missouri Valley investigations that are conducted by the Department.

V. Financial Requirements:

Table 42 shows the estimated Federal cost of this work.

VI. Authorizations:

Organic legislation of the U. S. Department of Agriculture.

Table 42. ESTIMATED COST

STATE	Estimated Cost : 1948		: 1949		Funds Required by Fiscal Years					: Total Est. Cost : Total Unshed. Cost	
	TOTAL	Annual for	Fiscal Year	Fiscal Year	1950	1951	1952	1953	1954	1955	6-Yr. Prog. : and Funds Req. after FY 1955
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Missouri	---	5,000	---	---	5,000	5,000	10,000	10,000	5,000	5,000	40,000
Iowa	---	5,000	---	---	5,000	5,000	10,000	10,000	5,000	5,000	40,000
Minnesota											
Kansas	---	10,000	---	---	10,000	10,000	15,000	15,000	10,000	10,000	70,000
Nebraska	---	10,000	---	---	10,000	15,000	15,000	15,000	15,000	10,000	80,000
South Dakota	---	20,000	---	---	20,000	25,000	25,000	25,000	25,000	20,000	140,000
North Dakota	---	20,000	---	---	20,000	25,000	25,000	25,000	25,000	20,000	140,000
Montana	---	10,000	---	---	10,000	15,000	15,000	15,000	15,000	10,000	80,000
Wyoming	---	10,000	---	---	10,000	15,000	15,000	15,000	15,000	10,000	80,000
Colorado	---	10,000	---	---	10,000	15,000	15,000	15,000	15,000	10,000	80,000
TOTAL	---	100,000	---	---	100,000	130,000	145,000	145,000	130,000	100,000	750,000



# MARKET OUTLOOK AND MARKET FACILITIES FOR THE COMMODITIES THAT ARE LIKELY TO BE PRODUCED IN AREAS TO BE IRRIGATED

Bureau of Agricultural Economics

## I. Objectives:

(a) To determine the market outlook--local, national and international--for the agricultural commodities which are adapted to irrigated production in the Missouri Basin and production of which is likely to be induced or altered significantly as a result of the Missouri Valley development.

(b) To provide a basis to be used in conjunction with production data in determining the probable competitive position of various agricultural commodities in the Missouri Basin.

(c) To determine the probable need for additional marketing facilities and means of maximizing the use of marketing facilities now available in the Missouri Basin.

## II. Problems

Because of its size, prospective production from the Missouri Basin development might well disrupt the market for established production areas unless it is planned in the light of its competitive and complementary relationships with other areas. For example, if the same percentage of sugar beets were grown under proposed irrigation as is generally so utilized in

existing irrigated areas of the Great Plains States, the acreage of sugar beets produced in continental United States in 1944 would be increased by more than fifty percent. Obviously, the prospective effects of such an increase in production should be appraised. The demand for new crops in crop rotations in order to control weeds will give crops such as sugar beets, potatoes, beans and corn a definite place in crop rotations of areas suitable to their production, but a careful appraisal of market prospects and market facilities will be essential to sound development.

## III. Significance:

An expansion in production as large as that which is anticipated in the Missouri Valley development may well shift some agricultural commodities from a deficit to a surplus position within the Great Plains, and even for the entire domestic production, and thus induce a significant change in their competitive position. On the other hand, the prospective increase in population within the Missouri Basin may create markets for commodities which are new to the region. The World War and its aftermath have resulted in uncertainty as to production policies and market prospects throughout

the world. All of these and other relevant factors must be appraised before the competitive position of agricultural commodities adapted to the Missouri Basin can be foreseen.

Shifts in production and significant changes in the level of production will bring marked changes in the requirements for marketing facilities. These too must be appraised in order to determine what new facilities will be required, how facilities now available can be utilized with a minimum loss, and what limitations the need for marketing facilities places on the production of various commodities.

## IV. Plan of Work:

(a) Assemble available information pertaining to immediate and long-time market outlook for agricultural commodities adapted to irrigated production in the Missouri Basin.

(b) Supplement and interpret these data to determine probable effects on market and prices for various levels of production within the Missouri Basin.

# MARKET OUTLOOK AND MARKET FACILITIES FOR THE COMMODITIES THAT ARE LIKELY TO BE PRODUCED IN AREAS TO BE IRRIGATED, Continued

## Bureau of Agricultural Economics

(c) Simultaneously and in conjunction with the development of types of farm and production expen- tancy data, determine levels of production most likely to be profitable in the Missouri Basin.	(f) This study will be carried out in coopera- tion with the State Agricultural Experiment Stations and other agencies, and will be closely integrated with other Missouri Basin investigations carried on by the U. S. Department of Agriculture.	VI. <u>Authorizations</u>  Organic legislation of the U. S. Depart- ment of Agriculture.
(d) In light of the prospectively most profit- able levels of production, determine the probable need for marketing facilities.	V. <u>Financial Requirements</u>  Table 43 shows the financial requirements for this work:	

(e) Inventory marketing facilities now available  
and determine means of maximizing their usefulness.

Table 43. ESTIMATED COST

STATE	Estimated Cost		1948		1949		FUNDS REQUIRED BY FISCAL YEARS								Total Est. Cost		Total Unexp. Cost	
	TOTAL	Annual for	Fiscal Year	Funds	Fiscal Year	Funds	1950	1951	1952	1953	1954	1955	6-yr. Prog.	and Funds Req.	1950 - 1955	after FY 1955		
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)		
Missouri	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Iowa	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Minnesota	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Kansas	---	10,000	---	---	---	---	10,000	15,000	15,000	15,000	10,000	10,000	75,000	---	---	---		
Nebraska	---	10,000	---	---	---	---	10,000	15,000	15,000	15,000	15,000	10,000	80,000	---	---	---		
South Dakota	---	15,000	---	---	---	---	15,000	20,000	20,000	20,000	20,000	15,000	110,000	---	---	---		
North Dakota	---	15,000	---	---	---	---	15,000	20,000	20,000	20,000	20,000	15,000	110,000	---	---	---		
Montana	---	10,000	---	---	---	---	10,000	15,000	15,000	15,000	10,000	10,000	75,000	---	---	---		
Wyoming	---	10,000	---	---	---	---	10,000	10,000	15,000	10,000	10,000	10,000	65,000	---	---	---		
Colorado	---	10,000	---	---	---	---	10,000	10,000	10,000	10,000	10,000	10,000	60,000	---	---	---		
TOTAL	---	80,000	---	---	---	---	80,000	105,000	110,000	105,000	95,000	80,000	575,000	---	---	---		



## ECONOMIC PROBLEMS OF IRRIGATION DEVELOPMENT AND SETTLEMENT

### Bureau of Agricultural Economics

#### I. Objectives:

- (a) To determine the relative irrigation efficiency and benefit of various alternative sites proposed for development.
- (b) To determine the costs and relative efficiency of alternative methods of applying irrigation water to land in various stages of development.
- (c) To determine warranted land costs and water charges including an equitable basis for the distribution of charges to water users and to explore alternative repayment arrangements.

(d) To explore the land settlement problems including capital requirements and financial arrangements and possible ways of making the transition to irrigated farming or to farming protected from flood hazards.

(e) To project probable population increases and the resulting need for expanded public facilities.

(f) To determine the means of obtaining the maximum stabilization of the Northern Plains through integration of irrigated and dry-land agriculture.

(g) To inventory the land resources to be withdrawn for reservoir sites, and appraise the effects

of withdrawing such lands on the economy of the area.

#### II. Problems:

Through the development of the Missouri Basin, a large number of farmers will change their operation from extensive dry land to intensive production under irrigation. Excess land will be sold for new farm units. Conversion of existing farms and development of new irrigated farms will create many financial problems that may require especially adapted credit facilities.

In establishing farms on new lands, it is essential that land costs be justified by expected long-term earnings and that water charges be in accordance with ability to pay, including consideration of the varying productivity of different land classes. In addition, the effectiveness of flexible repayment arrangements needs to be explored as a means of meeting the problem of fluctuating income.

In a large part of the areas proposed for irrigation, the need for irrigation water to supplement rainfall will vary greatly from year to year. Also, several of the areas proposed for irrigation contain

soils that are not suitable for intensive leveling, or may be difficult to drain because of depressions. Study is needed of the most economical methods of developing and irrigating such lands.

Federal acquisition of privately-owned land for reservoir development results in problems of relocation of farm operators, withdrawal of land from agricultural use, and disturbances in the financial structure of local government. Immediate knowledge of the approximate magnitude of these problems will aid in planning for their solution.

#### IV. Plan of Work:

(a) An inventory will be made of each proposed irrigation project showing (1) acreage to be irrigated; (2) estimated present use of land; (3) proposed crops under irrigation; (4) present number of farms; (5) probable number of farms under irrigation; (6) acreage to be brought under irrigation by years. From these data, areas representative of various parts of the Missouri Basin will be selected for detailed field studies of development and settlement problems.

ECONOMIC PROBLEMS OF IRRIGATION DEVELOPMENT AND SETTLEMENT, Continued  
Bureau of Agricultural Economics

(b) Experience on existing irrigation projects will be analysed to determine costs and efficiency of alternate methods of applying irrigation water.

(c) Studies will be made of the integration of irrigated and dry land agriculture on existing irrigation projects and surveys of proposed projects will be made to determine ways of relating new irrigation to adjacent dry land.

(d) An inventory will be made of the more than 100 reservoir sites to determine the size of the area to be purchased, land use, number of farms, and probable future agricultural use after the reservoir is in operation. For those sites that involve major changes, additional and more detailed studies will be made of the effect of withdrawing such agricultural resources on the economy of the area. Detailed studies will also be made of future agricultural use of land included in the purchase area which will not be flooded, or only flooded at infrequent intervals.

(e) This study will be carried out in cooperation with the State Agricultural Experiment Stations and other agencies, and will be closely integrated with other Missouri Basin investigations.

V. Financial Requirements:  
The cost of this work is estimated in Table 44.

VI. Authorization:  
Organic legislation of the U. S. Dept. of Agri.

Table 44. ESTIMATED COST

STATE	Estimated Cost : TOTAL : : (dollars) :	Funds Required by Fiscal Years										Total Est. Cost : Total Unshed. Cost	
		1948 : Fiscal Year : : (dollars) :	1949 : Fiscal Year : : (dollars) :	1950 : Fiscal Year : : (dollars) :	1951 : Fiscal Year : : (dollars) :	1952 : Fiscal Year : : (dollars) :	1953 : Fiscal Year : : (dollars) :	1954 : Fiscal Year : : (dollars) :	1955 : Fiscal Year : : (dollars) :	1956 : Fiscal Year : : (dollars) :	1957 : Fiscal Year : : (dollars) :	6 Yr. Prog. : 1950 - 1955 : : (dollars) :	and Funds Req. : after FY 1955 : : (dollars) :
Missouri	---	---	---	3,000	3,000	3,000	---	---	---	---	---	9,000	---
Iowa	---	---	---	2,000	2,000	2,000	---	---	---	---	---	6,000	---
Minnesota	---	---	---	---	---	---	---	---	---	---	---	---	---
Kansas	---	15,000	---	10,000	10,000	15,000	15,000	15,000	15,000	15,000	15,000	80,000	---
Nebraska	---	10,000	---	10,000	15,000	15,000	15,000	15,000	10,000	10,000	10,000	80,000	---
South Dakota	---	20,000	---	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	115,000	---
North Dakota	---	20,000	---	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	115,000	---
Montana	---	15,000	---	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	90,000	---
Wyoming	---	15,000	---	10,000	10,000	10,000	15,000	15,000	15,000	15,000	15,000	75,000	---
Colorado	---	10,000	---	10,000	15,000	15,000	15,000	10,000	10,000	10,000	10,000	75,000	---
TOTAL	---	105,000	---	90,000	110,000	115,000	115,000	110,000	105,000	105,000	105,000	645,000	---



## ECONOMIC PROBLEMS OF WATERSHED MANAGEMENT AND LAND CONSERVATION

### Bureau of Agricultural Economics

#### I. Objectives:

(a) To determine the probable costs and returns from various types and combinations of major land improvement and conservation measures and programs planned for the Basin, by sizes and types of farms and the extent of public interest in and responsibility for such programs on private holdings.

(b) To explore the relation of private land tenure to the conservation problem and the probable implications of expected trends in the land tenure situation.

(c) To study the economic problems connected with the use of publicly-owned land, and to appraise the economic relationship of these lands to the other land and water resources of the Missouri Basin.

#### II. Problems:

The accelerated land conservation program for the Missouri Basin is dependent upon acceptance of the recommended measures by land owners and operators. Research will help in getting this acceptance by showing the costs and returns of the program to individual operators, the public interest in conserva-

tion measures and amount and kind of public assistance to individual land owners, and the types of tenure arrangements most suitable for the application of an accelerated conservation program.

Another major problem centers around the use and control of the publicly-owned land in the Missouri Basin which occurs largely in the upper or western part. There are 70 million acres, or 20 percent, of the total area in Federal and State ownership. Port-

tions of these lands are extremely important in the yield of usable irrigation water. Other parts of the public lands are heavy producers of destructive silt. Most of the publicly-owned lands have a multiple use for grazing or timber, watershed, wildlife, recreation, etc. Part of the uses are public (in the sense that many share the use but no one has exclusive use), and there is often a private use, such as grazing. These various uses are often complementary, but sometimes they are competing. In addition to the conservation problem on public lands, there is a problem of applying conservation on those operating units that consist of part private and part publicly-owned land.

#### III. Significance:

The conservation of land is a vital part of the comprehensive development of the Missouri River Basin. In addition to their production of agricultural commodities, these lands play an important watershed role. Since these lands are owned, operated or used by thousands of individuals, conservation and development is a problem of both public and private financing. The economic problems of the individual farm will have an important bearing on acceptance of conservation.

#### Plan of Work:

(1) The Basin will be divided into areas of similar soils, type-of-farm and erosion problems. For each area, representative farms or groups of farms will be studied to determine costs and returns of land improvement and conservation programs recommended for the area. The amount of off-site and deferred benefits will be studied in relation to the public interest in conservation programs on privately-owned lands.

#### IV.

# ECONOMIC PROBLEMS OF WATERSHED MANAGEMENT AND LAND CONSERVATION, Continued

Bureau of Agricultural Economics

(2) Detailed studies of representative farms will be made to determine the relation of various forms of private land tenure to conservation of land resources. Various measures will be used to discover whether one type of land tenure is more favorable to conservation than another. Some of the field work for this study may be combined with Item 1.

(3) The publicly-owned land and its various

uses will be inventoried and a value placed on each use. Use values will be determined by assembling available data which will be checked by detailed studies in representative areas. The system of values in various uses will provide a guide as to the relative importance of public lands in the Missouri Basin, and for programs of improvement and conservation.

(4) This study will be carried out in coopera-

tion with the State Agricultural Experiment Stations and other agencies, and will be closely integrated with other Missouri Basin investigations carried on by the Department.

## V. Financial Requirements:

The cost of this work is estimated in Table 45.

## VI. Authorizations:

Organic legislation of the U. S. Department of Agriculture.

Table 45. ESTIMATED COST

STATE	Estimated Cost : : Annual for Fiscal Year : : TOTAL Cont. Programs : (dollars)	1948 : : Funds : (dollars)	1949 : : Funds : (dollars)	1950 : : Funds : (dollars)	1951 : : Funds : (dollars)	1952 : : Funds : (dollars)	1953 : : Funds : (dollars)	1954 : : Funds : (dollars)	1955 : : Funds : (dollars)	Total Est. Cost : : 6 Yr. Prog. : : 1950 - 1955 : (dollars)	Total Unshed. Cost : : and Funds Req. : : after FY 1955 : (dollars)
Missouri	---	10,000	3,000	---	10,000	15,000	15,000	10,000	10,000	75,000	---
Iowa	---	10,000	1,000	---	10,000	10,000	10,000	10,000	10,000	60,000	---
Minnesota	---	2,000	---	---	---	2,000	2,000	2,000	2,000	10,000	---
Kansas	---	10,000	1,000	---	10,000	15,000	15,000	10,000	10,000	75,000	---
Nebraska	---	10,000	1,000	---	10,000	15,000	15,000	10,000	10,000	75,000	---
South Dakota	---	10,000	1,000	---	10,000	15,000	15,000	10,000	10,000	75,000	---
North Dakota	---	10,000	1,000	---	10,000	15,000	15,000	10,000	10,000	75,000	---
Montana	---	10,000	1,000	---	10,000	15,000	15,000	10,000	10,000	75,000	---
Wyoming	---	10,000	1,000	---	10,000	15,000	15,000	10,000	10,000	75,000	---
Colorado	---	10,000	1,000	---	5,000	5,000	10,000	10,000	10,000	50,000	---
TOTAL	---	92,000	11,000	---	85,000	112,000	127,000	127,000	92,000	645,000	---



## STUDY OF PAST FEDERAL LAND BANK LOAN EXPERIENCE IN SEASONED IRRIGATED AREAS OF THE MISSOURI RIVER BASIN

### Farm Credit Administration

#### I. Objective:

This study should assist in determining sound loan policies in areas to be irrigated, and should indicate factors which will affect the ability of farmers to succeed financially in irrigated types of farming.

#### II. Problems:

There are special hazards in making loans in new irrigation districts since it has not always been possible to determine in advance whether the surrounding conditions will enable farmers to operate profitably. Consequently, lenders generally defer making loans in a new district until several years of experience have demonstrated successful operation and lack of serious hazards. Credit thus has been withheld from deserving farmers because of lack of knowledge of this particular type of agricultural credit.

#### III. Significance:

Careful analysis of past experience in financing farmers in irrigated districts, as proposed in this

project, would assist in identifying the conditions and circumstances which provide adequate debt-paying capacity and warrant credit service on a business basis. It would also be of value to all farmers on irrigated farms in the Missouri River Basin by indicating factors which have affected the ability of farmers to succeed in the past.

#### IV. Plan of Work:

From fifteen to twenty counties having substantial areas of irrigated farm land in Nebraska, South Dakota, North Dakota, Missouri, Wyoming and Colorado will be classified and mapped into five areas by land bank appraisers. The area classifications will reflect the variations in income producing capacity, stability and general desirability of farms, under the technique developed in the Farm Credit Administration and tested in other similar studies.

The reasons for the differences between the areas mapped will be carefully analyzed by appraisers, engineer-appraisers, and economists. It will be deter-

mined, for example, whether the variations in earning power are due to differences in soils, drainage, water charges, size of operating units, crops grown, or other factors. A careful explanation will be developed for each irrigation district covering the reasons why in some areas farmers have been able to earn good incomes and carry a reasonable debt and why in other areas there have been opposite results.

The Federal Land Bank, Land Bank Commissions and, where practicable, Production Credit loan experience in each area will be studied. The purpose will be to ascertain the size and type of loan that was carried successfully in each area in each county and to determine the conditions under which farmers have or have not been able to carry a given amount of debt.

This study will be conducted cooperatively by the central office and the Missouri Basin district offices of the Farm Credit Administration.

## Part Credit Administration

### V. Financial Requirements:

The costs set out in the Table 46 cover man-year requirements as follows:

1950	-	7.2	Use of IBM Equipment	5,495
1951	-	14.5	Supplies, printing, etc.	8,500
1952	-	<u>4.5</u>		
TOTAL		26.2	TOTAL	\$150,000

The total of \$150,000 would consist of the following:

## VI. Authorizations

Organic legislation of the U. S. Department of Agriculture.

Table 16. ESTIMATED COST

[illegible]



## EDUCATIONAL PROGRAM IN WATERSHED MANAGEMENT AND IRRIGATION AND DRAINAGE DEVELOPMENT

### Agricultural Extension Service

#### I. Objectives:

To make available to farmers, farm homemakers and rural youth the results of research conducted by the Department of Agriculture, the Land-Grant Colleges, and other research agencies. Special effort will be made to assist farm people in the Missouri Basin in the conservation of soil and water resources as an integral part of Basin development, and in making adjustments to changes in types of farming caused by the Basin development.

#### II. Problems

(a) Educational Program in Watershed Management: The educational services in areas of special development within the Basin will need to be greatly expanded if farm people are to be kept informed and participating in these developments. The addition of educational assistants in the critical erosion counties of western Iowa, northwestern Missouri and eastern Kansas, Nebraska and South Dakota will greatly speed up acceptance of these programs by farm people and increase their participation in the flood control program of these areas. As the availability of electric power increased, the

#### III. Plan of Work:

speeding up of its adoption and use on farms can be increased through the addition of home agents.

(b) Irrigation Education Programs: There is a special need for expanding educational services in areas where new irrigation will be undertaken. It is necessary to provide farmers with information upon which they can base judgments and decisions relative to their participation in irrigation developments. Once the plans for new irrigation projects are matured, information must be supplied farmers which will enable them to more quickly adjust their crop production, livestock management, and the organization of farm operations in general to the new situation. The rapidity with which the local Extension specialists in irrigation should be added depends upon when development work starts and the rate of progress anticipated. These specialists are needed in areas before construction starts and during the time that farmers are in the process of making up their minds about participating in new irrigation developments. Demonstrations are needed to show the workability of irrigation in the new area.

In addition to the local Extension specialists which are proposed for critical erosion areas and for areas proposed for irrigation, an increase in the number of Extension specialists in irrigation is proposed for Montana, Wyoming, Colorado, North Dakota, Nebraska, South Dakota and Kansas. Some expansion also will be needed in the services of specialists to serve farm homes and irrigation developments that will come through expansion in the use of electricity on the farms.

The estimates of personnel and funds needed to carry on this additional work, occasioned by expansion of the flood control, irrigation and power development in the Missouri Basin, are in addition to the staff presently employed on the broader educational program for rural people of the Basin.

The educational services of the U. S. Department of Agriculture are centered in the cooperative Extension Service. The program is carried on cooperatively with the State Agricultural Colleges.

# EDUCATIONAL PROGRAM IN WATERSHED MANAGEMENT AND IRRIGATION AND DRAINAGE DEVELOPMENT, Continued

## Agricultural Extension Service

### IV. Financial Requirements:

It is proposed that a staff of 181 additional educational specialists and county workers be added in 1950 at an estimated cost of \$968,000. By 1955, this should be increased to include 340 additional people at an estimated total cost of \$1,759,000. Total estimated cost for the cooperative Federal State Program for the six years is \$8,982,500.

These estimates of personnel and costs include the additional specialists that will be needed to serve extension of irrigation as well as flood control. Since Extension work is financed cooperatively by the Congress, by the State Legislatures and by county appropriations or local contributions, it is expected that State participation in supplying these additional funds would be on about the same basis as applied to present Extension funds.

Smith-Lever Act of 1914; Bankhead-Jones Act of 1935, as amended.

Table 47 shows the additional Federal funds that

Table 47. ESTIMATED FEDERAL COST OF AN ACCELERATED EXTENSION SERVICE EDUCATIONAL PROGRAM IN WATERSHED MANAGEMENT AND IRRIGATION AND DRAINAGE DEVELOPMENT.

STATE	Estimated Cost		1948		1949		FUNDS REQUIRED BY FISCAL YEARS							Total Est. Cost		Total Unexp. Cost	
	TOTAL	Cont. Programs	Fiscal Year	Funds	Fiscal Year	Funds	1950	1951	1952	1953	1954	1955	6-Yr. Prog. 1950-1955	and Funds Req. after FY 1955			
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	
Missouri	---	128,750	---	---	---	---	64,250	91,500	108,250	126,500	128,750	128,750	648,000	---	---	---	
Iowa	---	103,750	---	---	---	---	51,750	79,000	95,750	101,500	103,750	103,750	535,500	---	---	---	
Minnesota																	
Kansas	---	116,250	---	---	---	---	64,250	86,500	108,250	114,000	116,250	116,250	605,500	---	---	---	
Nebraska	---	154,750	---	---	---	---	75,500	107,000	140,000	146,750	154,750	154,750	778,750	---	---	---	
South Dakota	---	79,250	---	---	---	---	43,750	58,000	68,750	73,500	79,250	79,250	402,500	---	---	---	
North Dakota	---	78,000	---	---	---	---	38,750	52,500	62,000	70,000	78,000	78,000	379,850	---	---	---	
Montana	---	120,750	---	---	---	---	74,000	88,000	102,000	108,000	120,750	120,750	613,500	---	---	---	
Wyoming	---	52,000	---	---	---	---	38,250	43,000	45,500	49,750	52,000	52,000	280,500	---	---	---	
Colorado	---	46,000	---	---	---	---	33,500	36,000	40,250	46,000	46,000	46,000	247,750	---	---	---	
TOTAL	---	879,800	---	---	---	---	484,000	641,500	770,750	836,000	879,500	879,500	4,491,850	---	---	---	

\*These estimates are for an accelerated program only and are subject to revision as additional information becomes available from the various States.



# PAYMENTS TO STATES FOR AGRICULTURAL EXPERIMENT STATIONS

## Office of Experiment Stations

### I. Objective:

To promote agricultural research in all fields of agricultural science, including home economics and marketing.

### II. Problems:

The comprehensive development of the Missouri Basin increases the needs for Agricultural research within the State Agricultural Experiment Stations. Since this work is partly financed by Federal grant-in-aid funds, there is a need for expended Federal contributions.

### III. Significance:

Scientific research has provided a basic foundation for agricultural development. Farmers have increased their production of food and fibre about two-thirds since 1910. Agricultural research has played a major role in making such increase possible, and must be relied upon to continue to lead the way toward greater and more efficient production.

### IV. Plan of Work:

Agricultural research carried out by the State Agricultural Experiment Stations with funds from grant-in-aid by

Federal appropriation is done on a project basis approved by the Office of Experiment Stations.

### V. Financial Requirements:

Table 48 shows the Federal cost of the present program for the Basin. The estimates for 1950-1955 are subject to revision when additional information is available from the various States. The States are required to match these funds in various amounts, depending on act under which they are appropriated.

VI. Authorization: Hatch, Adams, Purnell, Bankhead-Jones and related acts; Research & Marketing Act.

Table 48. ESTIMATED FEDERAL COST \*

State	Estimated Cost		1948		1949		Funds Required by Fiscal Years								Total Est. Cost	
	TOTAL	Cont. Programs	Funds	Fiscal Year	Funds	Fiscal Year	1950	1951	1952	1953	1954	1955	1950-1955	after 1955		
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)		
Missouri	---	213,300	122,040	142,560	213,300	213,300	213,300	213,300	213,300	213,300	213,300	213,300	1,279,800	---		
Iowa	---	111,360	65,600	75,840	111,360	111,360	111,360	111,360	111,360	111,360	111,360	111,360	668,160	---		
Kansas	---	131,100	81,420	92,460	131,100	131,100	131,100	131,100	131,100	131,100	131,100	131,100	786,600	---		
Nebraska	---	251,000	160,000	180,000	251,000	251,000	251,000	251,000	251,000	251,000	251,000	251,000	1,506,000	---		
South Dakota	---	198,850	133,860	147,440	198,850	198,850	198,850	198,850	198,850	198,850	198,850	198,850	1,193,100	---		
North Dakota	---	183,040	122,320	135,520	183,040	183,040	183,040	183,040	183,040	183,040	183,040	183,040	1,098,240	---		
Montana	---	145,140	101,680	110,700	145,140	145,140	145,140	145,140	145,140	145,140	145,140	145,140	870,840	---		
Wyoming	---	108,720	79,200	85,680	108,720	108,720	108,720	108,720	108,720	108,720	108,720	108,720	652,320	---		
Colorado	---	54,000	36,150	40,230	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	324,000	---		
TOTAL	---	1,396,510	902,570	1,010,430	1,396,510	1,396,510	1,396,510	1,396,510	1,396,510	1,396,510	1,396,510	1,396,510	8,379,060	---		

\*The above figures include amounts under Sec. 9(b) 1 and 9(b) 2 of the Research and Marketing Act, but do not include amounts under the regional Research Fund, Sec. 9(b)3. The funds for each State have been adjusted according to the portion of the State in the Missouri Basin.

MISSOURI, ESTIMATED FUNDS FOR SIX-YEAR PROGRAM

	Estimated Cost	1948	1949	1950	1951	1952	1953	1954	1955	Post-Test Cost	Total Unallocated
	Total for Non-Cont. Programs	Funds	Funds	Funds	Funds	Funds	Funds	Funds	Funds	Cost and Funds	Cost and Funds
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	1950-1955	after 1955
<b>Forest Service</b>											
National Forest Protection, Management & Development	---	50,000	58,900	151,800	151,600	151,200	152,000	152,000	154,000	912,600	---
Acquisition of Land for National Forest	10,200,000	---	7,000	225,000	330,000	440,000	540,000	540,000	540,000	2,615,000	7,595,000
Forest & Range Watershed Research	---	36,000	7,800	24,000	27,000	30,000	30,000	36,000	36,000	186,000	---
Cooperative Fire Protection on State & Private Lands	---	20,000	25,000	15,000	55,000	90,000	130,000	130,000	130,000	580,000	---
Cooperative Tree Planting on State & Private Lands	2,000,000	---	2,800	15,000	20,000	25,000	40,000	55,000	75,000	230,000	1,770,000
Educational & Technical Assistance in Forestry	---	13,400	13,400	18,400	33,400	59,700	159,800	159,800	246,100	615,900	---
Sub-Total	12,200,000	55,000	114,900	479,200	617,000	755,300	993,500	1,072,800	1,181,100	5,139,500	9,355,000
<b>Forest Service &amp; Soil Conservation Service</b>											
Flood Control Surveys	272,000	---	143,000	1,296,000	1,520,000	1,895,000	2,820,000	3,810,000	3,810,000	15,151,000	---
Flood Control Remedial Measures	86,539,000	---	---	1,296,000	1,520,000	1,895,000	2,820,000	3,810,000	3,810,000	15,151,000	71,388,000
Sub-Total	86,811,000	---	143,000	1,296,000	1,520,000	1,895,000	2,820,000	3,810,000	3,810,000	15,151,000	71,388,000
<b>Soil Conservation Service</b>											
Program of Conservation in Districts	71,003,000	---	174,000	776,000	1,074,000	1,347,000	2,053,000	2,694,000	2,694,000	10,648,000	59,991,000
Technical Service for Drainage	3,384,000	---	19,000	230,000	251,000	287,000	287,000	290,000	290,000	1,635,000	1,711,000
Technical Service for Irrigation	---	---	---	---	---	---	---	---	---	---	---
Snow Surveys	1,721,000	16,000	25,000	86,000	115,000	143,000	171,000	171,000	171,000	857,000	864,000
Research on Conservation Treatment of Land	---	---	---	21,000	39,000	46,000	65,000	65,000	65,000	300,000	444,000
Research on Irrigation and Drainage	744,000	---	---	53,000	53,000	53,000	52,000	52,000	52,000	315,000	210,000
Land Use Adjustment Projects	525,000	---	22,000	53,000	53,000	53,000	52,000	52,000	52,000	315,000	---
Water Utilization Projects	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	77,377,000	211,000	255,000	1,165,000	1,532,000	1,875,000	2,638,000	3,272,000	3,272,000	13,755,000	63,220,000
<b>Production &amp; Marketing Administration</b>											
Agricultural Conservation Program	---	6,300,000	2,600,000	13,200,000	23,700,000	23,700,000	23,700,000	23,700,000	23,700,000	131,700,000	---
<b>Rural Home Administration</b>											
Water Facilities Loans	---	---	---	---	---	---	---	---	---	---	---
Production and Subsidence Loans	---	---	---	---	---	---	---	---	---	---	---
Farm Ownership Loans	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	---	---	---	---	---	---	---	---	---	---
<b>Rural Electrification Administration</b>											
Rural Electrification Loans	---	28,650,000	29,500,000	144,000,000	8,000,000	6,000,000	6,000,000	5,000,000	5,000,000	444,000,000	---
<b>Bureau of Plant Industry, Soils &amp; Agr. Engineering</b>											
Basic Soil Survey of Irrigable Areas	---	---	---	---	---	---	---	---	---	---	---
Basic Soil Survey of Watershed Lands	1,375,000	10,000	15,000	30,000	30,000	80,000	94,000	118,000	118,000	470,000	905,000
Research in Soil & Crop Management under Irrigation	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	1,375,000	10,000	15,000	30,000	30,000	80,000	94,000	118,000	118,000	470,000	905,000
<b>Bureau of Agricultural Economics</b>											
Research on Income Quantities of Irrigation Farming	---	---	---	---	---	---	---	---	---	---	---
Research on Market Outlook and Facilities	---	---	---	---	---	---	---	---	---	---	---
Research on Economic Problems of Irrig. Development	---	---	---	---	---	---	---	---	---	---	---
Research on Economic Problems of Watershed Mgt.	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	---	---	---	---	---	---	---	---	---	---
<b>Para Credit Administration</b>											
Study of Loan Experience in Irrigated Areas	---	---	---	---	---	---	---	---	---	---	---
<b>Agricultural Extension Service</b>											
Ed. Program in Watershed Mgt. & Irrig. & Drge. Dev.	---	128,750	---	---	---	108,250	126,500	128,750	128,750	648,000	---
<b>Office of Experiment Stations</b>											
Payments to States for Agricultural Research	---	122,040	142,560	213,300	213,300	213,300	213,300	213,300	213,300	1,279,800	---
<b>GRAND TOTAL, USDA 6-YEAR PROGRAM IN MISSOURI</b>	177,763,000	47,460,150	36,880,036	37,956,750	45,131,800	48,554,460	52,849,300	60,166,850	60,275,150	304,934,300	144,868,000

\*Entire State.

\*\*Accelerated program only.



IOWA, ESTIMATED FUNDS FOR SIX-YEAR PROGRAM

	Estimated Cost	1948	1949	1950	1951	1952	1953	1954	1955	6-Year Prog.	Total Unallocated
	Total for Non-Cont. Programs	Fiscal Year: Punds	Fiscal Year: Punds	Fiscal Year: Punds	Fiscal Year: Punds	Fiscal Year: Punds	Fiscal Year: Punds	Fiscal Year: Punds	Fiscal Year: Punds	1950-1955	Req. after 1955
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
<b>Forest Service</b>											
National Forest Protection, Management & Development											
Acquisition of Land for National Forest	24,000	5,200	5,200	16,000	18,000	20,000	22,000	24,000	24,000	124,000	---
Forest & Range Watershed Research	---	---	---	---	---	---	---	---	---	---	---
Cooperative Fire Protection on State & Private Lands	3,000	500	500	1,400	1,500	2,000	3,000	3,000	3,000	13,900	---
Cooperative Fire Planting on State & Private Lands	250,000	---	---	3,500	5,000	6,000	10,000	15,000	30,000	59,500	190,500
Educational & Technical Assistance in Forestry	44,500	4,000	4,000	6,500	11,500	19,000	26,500	24,000	11,500	139,000	---
Sub-Total	250,000	10,100	10,200	27,100	36,000	47,000	61,500	76,000	3,500	336,400	190,500
<b>Forest Service &amp; Soil Conservation Service</b>											
Flood Control Surveys	70,000	25,000	15,000	1,255,000	1,255,000	1,160,000	1,124,000	743,000	74,000	6,348,000	144,146,000
Flood Control Remedial Measures	53,136,000	1,112,000	1,500,000	1,255,000	1,255,000	1,160,000	1,124,000	743,000	74,000	6,348,000	144,146,000
Sub-Total	53,206,000	1,167,000	1,515,000	1,255,000	1,255,000	1,160,000	1,124,000	743,000	74,000	6,348,000	144,146,000
<b>Soil Conservation Service</b>											
Program of Conservation in Districts	42,741,000	135,000	365,000	470,000	650,000	820,000	1,251,000	1,640,000	1,640,000	6,471,000	35,470,000
Technical Service for Drainage	2,256,000	12,000	13,000	153,000	167,000	192,000	192,000	192,000	192,000	1,089,000	1,143,000
Technical Service for Irrigation	---	---	---	---	---	---	---	---	---	---	---
Snow Surveys	---	---	---	---	---	---	---	---	---	---	---
Research on Conservation Treatment of Land	1,605,000	19,000	29,000	83,000	106,000	130,000	153,000	153,000	153,000	778,000	827,000
Research on Irrigation and Drainage	599,000	---	---	32,000	38,000	43,000	68,000	47,000	47,000	275,000	324,000
Land Use Adjustment Projects	---	---	---	---	---	---	---	---	---	---	---
Water Utilization Projects	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	47,201,000	146,000	407,000	738,000	961,000	1,185,000	1,664,000	2,032,000	2,032,000	8,612,000	37,764,000
<b>Production &amp; Marketing Administration</b>											
Agricultural Conservation Program	---	---	---	---	---	---	---	---	---	---	---
Farmers Home Administration	---	---	---	---	---	---	---	---	---	---	---
Water Facilities Loans	---	---	---	---	---	---	---	---	---	---	---
Production and Succession Loans	---	---	---	---	---	---	---	---	---	---	---
Farm Ownership Loans	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	---	---	---	---	---	---	---	---	---	---
<b>Rural Electrification Administration</b>											
Rural Electrification Loans	---	---	---	---	---	---	---	---	---	---	---
Bureau of Plant Industry, Soils & Agril. Engineering	---	---	---	---	---	---	---	---	---	---	---
Basic Soil Survey of Irrigable Areas	---	---	---	---	---	---	---	---	---	---	---
Basic Soil Survey of Watershed Lands	---	---	---	---	---	---	---	---	---	---	---
Research in Soil & Crop Management under Irrigation	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	---	---	---	---	---	---	---	---	---	---
<b>Bureau of Agricultural Economics</b>											
Research on Income Potentials of Irrigation Farming	---	---	---	---	---	---	---	---	---	---	---
Research on Market Outlook and Facilities	---	---	---	---	---	---	---	---	---	---	---
Research on Economic Problems of Irrig. Development	---	---	---	---	---	---	---	---	---	---	---
Research on Economic Problems of Watershed Mgt.	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	---	---	---	---	---	---	---	---	---	---
<b>Farm Credit Administration</b>											
Study of Loan Experience in Irrigated Areas	---	---	---	---	---	---	---	---	---	---	---
Agricultural Extension Service	---	---	---	---	---	---	---	---	---	---	---
Edu. Program in Watershed Mgt. & Irrig. & Drgs. Dev.	---	---	---	---	---	---	---	---	---	---	---
Office of Experiment Stations	---	---	---	---	---	---	---	---	---	---	---
Payments to States for Agricultural Research	---	---	---	---	---	---	---	---	---	---	---
GRAND TOTAL, USDA 6-YEAR PROGRAM IN IOWA	101,177,000	24,298,599	25,739,033	20,874,010	24,374,360	26,194,110	25,099,360	29,056,110	29,072,610	154,910,560	82,406,000

\* Entire State.

\*\* Accelerated program only.

## MINNESOTA, ESTIMATED FUNDS FOR SIX-YEAR PROGRAM

	Estimated Cost Total for Non-Cont. Programs (dollars)	1948 Fiscal Year Funds (dollars)	1949 Fiscal Year Funds (dollars)	1950 (dollars)	1951 (dollars)	1952 (dollars)	1953 (dollars)	1954 (dollars)	1955 (dollars)	Total Est. Cost 6-Year Prog. 1950-1955 (dollars)	Total Unalloc'd. Cost & Funds Req. after 1955 (dollars)
<b>Forest Service</b>											
National Forest Protection, Management & Development											
Acquisition of Land for National Forest	---	1,300	1,300	4,000	4,500	5,000	5,500	6,000	6,000	31,000	---
Forest & Range Watershed Research	34,000	---	---	2,000	3,000	4,000	5,000	10,000	10,000	34,000	---
Cooperative Fire Protection on State & Private Lands	8,200	700	700	1,900	2,100	4,300	5,600	6,900	8,200	30,000	---
Educational & Technical Assistance in Forestry	14,200	2,000	2,000	7,900	10,600	13,300	16,100	22,900	24,200	95,000	---
Sub-Total	56,400	4,000	4,000	14,800	20,000	27,000	31,000	41,000	41,000	170,000	1,367,000
<b>Forest Service &amp; Soil Conservation Service</b>											
Flood Control Surveys	7,000	9,000	9,000	100,000	100,000	100,000	100,000	150,000	200,000	750,000	936,000
Flood Control Remedial Measures	1,702,000	---	---	100,000	100,000	100,000	100,000	150,000	200,000	750,000	936,000
Sub-Total	1,709,000	9,000	9,000	100,000	100,000	100,000	100,000	150,000	200,000	750,000	936,000
<b>Soil Conservation Service</b>											
Program of Conservation in Districts	1,582,000	---	---	---	---	---	---	---	---	---	---
Technical Service for Drainage	53,000	---	---	---	---	---	---	---	---	---	---
Technical Service for Irrigation	---	---	---	---	---	---	---	---	---	---	---
Soil Surveys	---	---	---	---	---	---	---	---	---	---	---
Research on Conservation Treatment of Land	---	---	---	---	---	---	---	---	---	---	---
Research on Irrigation and Drainage	---	---	---	---	---	---	---	---	---	---	---
Land Use Adjustment Projects	---	---	---	---	---	---	---	---	---	---	---
Water Utilization Projects	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	1,635,000	---	---	---	---	---	---	---	---	---	---
<b>Production &amp; Marketing Administration</b>											
Agricultural Conservation Program	---	---	---	---	---	---	---	---	---	---	---
Farmer Home Administration	---	---	---	---	---	---	---	---	---	---	---
Water Facilities Loans	---	---	---	---	---	---	---	---	---	---	---
Production and Subsidence Loans	---	---	---	---	---	---	---	---	---	---	---
Farm Ownership Loans	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	---	---	---	---	---	---	---	---	---	---
<b>Rural Electrification Administration</b>											
Rural Electrification Loans	---	---	---	---	---	---	---	---	---	---	---
<b>Bureau of Plant Industry, Soils &amp; Agri. Eng.</b>											
Soils Survey of Irrigable Areas	---	---	---	---	---	---	---	---	---	---	---
Soils Survey of Watershed Lands	---	---	---	---	---	---	---	---	---	---	---
Research in Soil & Crop Management under Irrigation	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	---	---	---	---	---	---	---	---	---	---
<b>Bureau of Agricultural Economics</b>											
Research on Income Potential of Irrigation Farming	---	---	---	---	---	---	---	---	---	---	---
Research on Market Outlook and Facilities	---	---	---	---	---	---	---	---	---	---	---
Research on Economic Problems of Irrig. Development	---	---	---	---	---	---	---	---	---	---	---
Research on Economic Problems of Watershed Develop.	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	---	---	---	---	---	---	---	---	---	---
<b>Farm Credit Administration</b>											
Study of Loan Experience in Irrigated Areas	---	---	---	---	---	---	---	---	---	---	---
<b>Agricultural Extension Service</b>											
Ext. Program in Watershed Mgt. & Irrig. & Drge. Dev.	---	---	---	---	---	---	---	---	---	---	---
<b>Office of Experiment Stations</b>											
Payments to States for Agricultural Research	---	---	---	---	---	---	---	---	---	---	---
<b>GRAND TOTAL, USDA 6-YEAR PROGRAM IN MINNESOTA</b>	3,361,000	20,115,348	23,855,126	10,649,900	7,790,600	7,102,900	8,265,800	6,792,900	5,844,200	16,146,000	2,336,000

\* Entire State.

\*\* Accelerated program only.



# KANSAS, ESTIMATED FUNDS FOR SIX-YEAR PROGRAM

	Total for Non-Cont. Programs	Estimated Cost Annual for 1948	Funds for 1948	Funds for 1949	1950	1951	1952	1953	1954	1955	Total, Est. Cost if Total Unchanged
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
<b>Forest Service</b>											
National Forest Protection, Management & Development											
Acquisition of Land for National Forest											
Forest & Range Watershed Research											
Cooperative Fire Protection on State & Private Lands	340,000	---	5,200	5,200	16,000	18,000	20,000	22,000	24,000	24,000	124,000
Cooperative Fire Planting on State & Private Lands	---	---	1,000	1,000	4,000	6,000	7,000	15,000	20,000	20,000	72,000
Educational & Technical Assistance in Forestry	---	---	1,000	1,000	3,500	8,500	14,700	20,900	27,200	23,500	108,500
Sub-Total	340,000	---	7,200	7,200	23,500	32,500	41,700	57,900	71,200	71,500	304,500
<b>Forest Service &amp; Soil Conservation Service</b>											
Flood Control Surveys	101,000	---	26,000	75,000	837,000	1,255,000	1,673,000	2,091,000	2,343,000	2,343,000	10,542,000
Flood Control Remedial Measures	71,553,000	---	26,000	75,000	837,000	1,255,000	1,673,000	2,091,000	2,343,000	2,343,000	10,542,000
Sub-Total	71,654,000	---	52,000	150,000	1,674,000	2,510,000	3,346,000	4,182,000	4,686,000	4,686,000	20,084,000
<b>Soil Conservation Service</b>											
Program of Conservation in Districts	65,281,000	---	562,000	643,000	833,000	1,152,000	1,446,000	2,214,000	2,891,000	2,891,000	11,427,000
Technical Service for Drainage	752,000	---	---	---	31,000	34,000	39,000	39,000	39,000	39,000	221,000
Technical Service for Irrigation	2,969,000	---	8,000	8,000	11,000	12,000	12,000	23,000	37,000	37,000	136,000
Soil Surveys	---	---	---	---	---	---	---	---	---	---	---
Research on Conservation Treatment of Land	1,036,000	---	---	---	49,000	70,000	90,000	112,000	112,000	112,000	545,000
Research on Irrigation and Drainage	591,000	---	---	6,000	29,000	59,000	49,000	49,000	60,000	60,000	306,000
Land Use Adjustment Projects	---	---	---	---	---	---	---	---	---	---	---
Water Utilization Projects	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	70,629,000	---	570,000	657,000	953,000	1,327,000	1,630,000	2,437,000	3,139,000	3,139,000	12,635,000
<b>Production &amp; Marketing Administration</b>											
Agricultural Conservation Program	---	20,300,000	4,600,000	2,300,000	12,100,000	20,300,000	20,300,000	20,300,000	20,300,000	20,300,000	113,600,000
<b>Farmers Home Administration</b>											
Water Facilities Loans	---	---	35,980	44,952	335,000	390,000	546,000	624,000	624,000	585,000	3,104,000
Production and Subsidence Loans	---	---	676,783	845,978	2,475,000	3,413,000	5,601,000	6,851,000	9,976,000	9,976,000	38,282,000
Farm Ownership Loans	---	---	1,050,285	1,812,855	1,590,000	1,716,000	1,968,000	2,598,000	2,598,000	2,598,000	12,498,000
Sub-Total	---	---	2,163,048	2,703,785	4,400,000	5,519,000	8,115,000	9,443,000	13,198,000	13,198,000	53,884,000
<b>Rural Electrification Administration</b>											
Rural Electrification Loans	---	---	12,158,000	17,500,000	7,000,000	5,000,000	4,000,000	3,000,000	3,000,000	3,000,000	25,000,000
<b>Bureau of Plant Industry, Soils &amp; Agr. Engineering</b>											
Basic Soil Survey of Irrigable Areas	81,000	---	---	---	39,000	18,000	8,000	16,000	---	---	81,000
Basic Soil Survey of Watered Lands	1,543,000	---	4,000	4,000	6,500	15,000	64,000	90,000	128,000	137,000	470,500
Research in Soil & Crop Management under Irrigation	---	---	6,500	6,500	75,000	85,000	85,000	85,000	85,000	85,000	500,000
Sub-Total	1,624,000	---	10,500	10,500	120,500	113,000	157,000	191,000	213,000	222,000	1,051,500
<b>Bureau of Agricultural Economics</b>											
Research on Income Potentials of Irrigation Farming	---	10,000	---	---	10,000	10,000	15,000	15,000	10,000	10,000	70,000
Research on Market Outlook and Facilities	---	10,000	---	---	10,000	15,000	15,000	15,000	10,000	10,000	75,000
Research on Economic Problems of Irrig. Development	---	10,000	---	---	10,000	15,000	15,000	15,000	10,000	10,000	75,000
Research on Economic Problems of Watered Mgt.	---	10,000	---	---	10,000	15,000	15,000	15,000	10,000	10,000	75,000
Sub-Total	---	40,000	---	---	40,000	50,000	60,000	60,000	40,000	40,000	300,000
<b>Farm Credit Administration</b>											
Study of Loan Experience in Irrigated Areas	---	---	---	---	---	---	---	---	---	---	---
<b>Agricultural Extension Service</b>											
Edu. Program in Watered Mgt. & Irrig. & Drge. Dev.	---	116,250	---	---	64,250	86,500	108,250	114,000	116,250	116,250	605,500
Office of Experiment Stations	---	---	---	---	---	---	---	---	---	---	---
Payments to States for Agricultural Research	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	131,100	---	---	131,100	131,100	131,100	131,100	131,100	131,100	786,600
<b>GRAND TOTAL, USDA 6-YEAR PROGRAM IN KANSAS</b>	143,947,000	33,308,950	19,616,168	23,345,915	25,669,350	33,849,100	36,266,050	37,825,000	42,556,550	42,532,650	218,659,900
											118,824,500

\* Entire State.

\*\* Accelerated program only.

ALASKA, ESTIMATED FUNDS FOR SIX-YEAR PROGRAM

	Total for Non-Cont. Programs	Estimated Cost	1949	1950	1951	1952	1953	1954	1955	Total Estimated	Total Unallocated
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
<b>Forest Service</b>											
National Forest Protection, Management & Development	---	76,400	40,000	65,200	86,500	73,400	73,400	73,400	425,200	---	---
Acquisition of Land for National Forest	---	---	---	---	---	---	---	---	---	---	---
Forest & Range Watershed Research	---	86,000	14,300	44,000	49,500	60,500	60,500	66,000	341,000	---	---
Cooperative Fire Protection on State & Private Lands	2,296,000	---	3,200	12,000	15,000	40,000	40,000	55,000	217,000	---	2,079,000
Recreational & Technical Assistance in Forestry	---	82,600	8,000	8,500	13,500	21,000	21,000	46,000	181,000	---	---
Sub-Total	---	189,000	65,500	127,700	144,300	207,400	207,400	240,400	1,164,200	---	2,079,000
<b>Forest Service &amp; Soil Conservation Service</b>											
Flood Control Surveys	191,000	---	82,000	---	---	---	---	---	---	---	---
Flood Control Remedial Measures	140,226,000	---	---	1,000,000	1,241,000	1,800,000	4,200,000	5,761,000	19,785,000	---	120,463,000
Sub-Total	140,417,000	---	82,000	1,000,000	1,241,000	1,800,000	4,200,000	5,761,000	19,785,000	---	120,463,000
<b>Soil Conservation Service</b>											
Program of Conservation in Districts	116,769,000	---	847,000	988,000	1,327,000	1,583,000	2,565,000	3,457,000	13,377,000	---	101,574,000
Technical Service for Drainage	1,128,000	---	---	76,000	83,000	98,000	98,000	86,000	539,000	---	689,000
Technical Service for Irrigation	13,015,000	---	383,000	424,000	669,000	678,000	1,099,000	1,482,000	5,734,000	---	6,602,000
Snow Surveys	---	---	---	---	---	---	---	---	---	---	---
Research on Conservation Treatment of Land	1,801,000	---	26,000	95,000	127,000	158,000	189,000	189,000	947,000	---	954,000
Research on Irrigation and Drainage	1,821,000	---	17,000	77,000	86,000	125,000	135,000	146,000	724,000	---	897,000
Land Use Adjustment Projects	160,000	---	7,000	8,000	8,000	8,000	7,000	7,000	45,000	---	91,000
Water Utilization Projects	160,000	---	80,000	15,000	15,000	15,000	---	---	45,000	---	---
Sub-Total	134,744,000	---	1,359,000	1,503,000	2,224,000	2,662,000	4,300,000	5,376,000	21,411,000	---	110,607,000
<b>Production &amp; Marketing Administration</b>											
Agriculture in Conservation Program	---	22,800,000	8,100,000	18,600,000	22,800,000	22,800,000	22,800,000	22,800,000	132,600,000	---	---
<b>Farmer Home Administration</b>											
Water Facilities Loans	---	---	52,131	722,000	840,000	1,776,000	1,344,000	1,344,000	1,260,000	---	---
Production and Subsistence Loans	---	15,375,000	1,127,800	3,354,000	5,243,000	8,420,000	10,065,000	15,375,000	58,462,000	---	---
Farm Ownership Loans	---	20,582,000	2,752,000	2,440,100	2,843,000	3,368,000	3,368,000	4,670,000	21,436,000	---	---
Sub-Total	---	35,957,000	3,902,116	7,516,100	8,926,000	13,161,000	14,764,000	21,389,000	86,643,000	---	---
<b>Rural Electrification Administration</b>											
Rural Electrification Loans *	---	---	15,139,000	20,000,000	7,000,000	6,000,000	6,000,000	6,000,000	40,000,000	---	---
<b>Bureau of Plant Industry, Soils &amp; Agri. Engineering</b>											
Basic Soil Survey of Irrigable Areas	186,800	---	---	28,000	28,000	69,400	22,000	29,000	185,800	---	---
Basic Soil Survey of Watershed Lands	415,800	---	8,500	8,500	8,500	32,000	67,800	57,400	264,300	---	---
Research in Soil & Crop Management under Irrigation	---	85,000	---	75,000	85,000	85,000	85,000	85,000	500,000	---	149,500
Sub-Total	599,600	85,000	8,500	111,500	113,500	186,400	174,800	170,400	950,100	---	149,500
<b>Bureau of Agricultural Economics</b>											
Research on Income Potentials of Irrigation Farming	---	10,000	---	10,000	15,000	15,000	15,000	15,000	80,000	---	---
Research on Market Outlook and Facilities	---	10,000	---	10,000	15,000	15,000	15,000	15,000	80,000	---	---
Research on Economic Problems of Irrig. Development	---	10,000	---	10,000	15,000	15,000	15,000	10,000	76,000	---	---
Research on Economic Problems of Watershed Mgt.	---	40,000	---	40,000	60,000	60,000	60,000	40,000	315,000	---	---
Sub-Total	---	60,000	---	60,000	95,000	95,000	95,000	40,000	315,000	---	---
<b>Farm Credit Administration</b>											
Study of Loan Experience in Irrigated Areas	---	---	---	7,200	11,400	3,900	---	---	22,500	---	---
<b>Agricultural Extension Service</b>											
Ext. Program in Watershed Mgt. & Irrig. & Devel. **	---	154,750	---	75,500	107,000	140,000	146,750	154,750	778,750	---	---
<b>Office of Experiment Stations</b>											
Payments to States for Agricultural Research	---	251,000	160,000	251,000	251,000	251,000	251,000	251,000	1,505,000	---	---
<b>GRAND TOTAL, USDA 6-YEAR PROGRAM IN ALASKA</b>	279,056,800	43,575,650	23,621,116	30,386,214	40,893,900	42,877,700	46,233,800	61,197,560	305,053,550	235,298,500	---

\* Entire State.

\*\* Accelerated program only.



**SOUTH DAKOTA, ESTIMATED FUNDS FOR SIX-YEAR PROGRAM**

	Estimated Cost	1948	1949	1950	1951	1952	1953	1954	1955	6-Yr. Prog.	Total Unallocated
	Total For Cont. Programs (dollars)	Fiscal Year: Funds (dollars)	Fiscal Year: Funds (dollars)	Fiscal Year: Funds (dollars)	Fiscal Year: Funds (dollars)	Fiscal Year: Funds (dollars)	Fiscal Year: Funds (dollars)	Fiscal Year: Funds (dollars)	Fiscal Year: Funds (dollars)	1950-1955 (dollars)	Cost and Funds Req. after '55 (dollars)
<b>Forest Service</b>											
National Forest Protection, Management & Development	---	300,000	353,400	495,100	499,100	620,700	546,300	547,300	558,200	3,164,700	---
Acquisition of Land for National Forest	1,200,000	---	---	25,000	35,000	60,000	65,000	65,000	65,000	305,000	895,000
Forest & Range Watershed Research	---	19,500	19,500	60,000	67,500	78,000	82,500	90,000	90,000	486,000	---
Cooperative Fire Protection on State & Private Lands	800,000	2,400	7,000	7,000	8,000	9,000	9,000	9,000	9,000	61,000	---
Cooperative Tree Planting on State & Private Lands	---	1,500	2,400	8,500	11,000	13,500	30,000	45,000	60,000	168,000	632,000
Educational & Technical Assistance in Forestry	---	1,500	1,500	4,000	9,000	14,000	21,500	29,000	36,500	114,000	---
Sub-Total	2,000,000	330,400	383,900	599,600	629,600	882,200	754,300	786,300	816,700	4,267,700	1,627,000
<b>Forest Service &amp; Soil Conservation Service</b>											
Flood Control Surveys	108,000	---	28,000	---	---	---	---	---	---	---	---
Flood Control Remedial Measures	86,961,000	---	---	780,000	786,000	1,247,000	2,911,000	3,982,000	3,992,000	13,668,000	---
Sub-Total	87,069,000	28,000	75,000	780,000	786,000	1,247,000	2,911,000	3,982,000	3,992,000	13,668,000	---
<b>Soil Conservation Service</b>											
Program of Conservation in Districts	72,190,000	---	600,000	710,000	1,004,000	1,273,000	1,979,000	2,599,000	2,699,000	10,164,000	10,806,000
Technical Service for Drainage	---	---	---	---	---	---	---	---	---	---	---
Technical Service for Irrigation	7,959,000	60,000	76,000	79,000	112,000	142,000	220,000	290,000	290,000	1,135,000	6,690,000
Snow Surveys	---	---	---	---	---	---	---	---	---	---	---
Research on Conservation Treatment of Land	1,307,000	---	---	10,000	5,000	5,000	5,000	4,000	3,000	32,000	---
Research on Irrigation and Drainage	1,215,000	---	7,000	62,000	88,000	116,000	142,000	142,000	142,000	692,000	616,000
Land Use Adjustment Projects	820,000	---	---	11,000	92,000	101,000	112,000	112,000	112,000	591,000	824,000
Water Utilization Projects	2,675,000	45,000	47,000	45,000	45,000	40,000	40,000	40,000	40,000	260,000	480,000
Sub-Total	86,166,000	9,000	12,000	330,000	630,000	860,000	1,225,000	150,000	90,000	2,576,000	79,000
	---	661,000	833,000	1,298,000	1,976,000	2,527,000	3,023,000	3,337,000	3,278,000	15,437,000	69,293,000
<b>Production &amp; Marketing Administration</b>											
Agricultural Conservation Program	---	5,400,000	2,800,000	14,200,000	17,600,000	17,600,000	17,600,000	17,600,000	17,600,000	101,700,000	---
<b>Farmers Home Administration</b>											
Water Facilities Loans	---	20,878	26,097	679,000	790,000	1,106,000	1,264,000	1,264,000	1,186,000	6,288,000	---
Production and Subsistence Loans	9,215,000	1,362,669	1,703,336	2,434,000	3,283,000	5,260,000	6,390,000	9,216,000	9,216,000	35,797,000	---
Farm Ownership Loans	---	1,317,246	1,646,556	1,698,000	1,932,000	2,460,000	2,460,000	3,729,000	3,729,000	16,029,000	---
Sub-Total	12,944,000	2,700,793	3,375,989	4,811,000	6,025,000	8,926,000	10,114,000	14,208,000	14,129,000	58,115,000	---
<b>Rural Electrification Administration</b>											
Rural Electrification Loans	---	12,443,000	20,000,000	8,000,000	3,000,000	2,600,000	2,600,000	2,000,000	2,000,000	20,000,000	---
<b>Bureau of Plant Industry, Soils &amp; Agr. Engineering</b>											
Basic Soil Survey of Irrigable Areas	210,000	---	9,000	82,000	42,000	28,000	30,000	28,000	---	210,000	---
Basic Soil Survey of Watershed Lands	2,679,000	---	---	---	35,000	76,000	127,500	122,000	151,000	511,600	---
Research in Soil & Crop Management under Irrigation	---	---	---	75,000	85,000	85,000	85,000	85,000	85,000	600,000	---
Sub-Total	2,889,000	7,000	9,000	157,000	182,000	189,000	242,800	236,000	236,000	1,221,600	---
<b>Bureau of Agricultural Economics</b>											
Research on Income Potentials of Irrigation Farming	---	20,000	---	30,000	25,000	26,000	25,000	25,000	20,000	140,000	---
Research on Market Outlook and Facilities	---	15,000	---	15,000	20,000	20,000	20,000	20,000	15,000	110,000	---
Research on Economic Problems of Irrig. Development	---	20,000	---	15,000	20,000	20,000	20,000	20,000	20,000	116,000	---
Research on Economic Problems of Watershed Mgt.	---	10,000	---	10,000	15,000	15,000	15,000	10,000	10,000	75,000	---
Sub-Total	---	65,000	---	60,000	80,000	80,000	80,000	75,000	65,000	440,000	---
<b>Farm Credit Administration</b>											
Study of Loan Experience in Irrigated Areas	---	---	---	960	1,520	---	---	---	---	3,000	---
<b>Agricultural Extension Service</b>											
Edn. Program in Watershed Mgt. & Irrig. & Drge. Dev.	---	79,250	---	43,760	58,000	68,760	73,500	79,260	79,260	402,600	---
<b>Office of Experiment Stations</b>											
Payments to States for Agricultural Research	---	198,850	117,140	198,850	198,850	198,850	198,850	198,850	198,850	1,193,100	---
<b>GRAND TOTAL, USDA 6-YEAR PROGRAM IN SOUTH DAKOTA</b>	178,109,000	31,566,800	21,704,053	27,624,229	30,129,160	30,396,970	37,397,150	42,410,100	42,292,800	216,445,800	146,270,600

\* Entire State.

\*\* Accelerated program only.

## NORTH DAKOTA, ESTIMATED FUNDS FOR PROPOSED SIX-YEAR PROGRAM

	Estimated Cost		Funds Required by Fiscal Year		Funds Required by Fiscal Year		Funds Required by Fiscal Year		Funds Required by Fiscal Year		Funds Required by Fiscal Year		Total Unallocated	
	Total for Home Cont. Programs	Annual For Cont. Programs	Fiscal Year: 1948	Fiscal Year: 1949	Fiscal Year: 1950	Fiscal Year: 1951	Fiscal Year: 1952	Fiscal Year: 1953	Fiscal Year: 1954	Fiscal Year: 1955	Fiscal Year: 1956	Fiscal Year: 1957	6-Year Prog. : 1950-1955	Cost & Funds Req. after 1955
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
<b>Forest Service</b>														
National Forest Protection, Management and Development														
Acquisition of Land for National Forests														
Forest & Range Watershed Research														
Cooperative Fire Protection on State and Private Lands														
Educational Tree Planting on State and Private Lands														
Educational & Technical Assistance in Forestry														
Sub-Total														
Forest Service & Soil Conservation Service														
Flood Control Surveys														
Flood Control Remedial Measures														
Sub-Total														
Soil Conservation Service														
Program of Conservation in Districts														
Technical Service for Drainage														
Technical Service for Irrigation														
Snow Surveys														
Research on Conservation Treatment of Land														
Research on Irrigation and Drainage														
Land Use Adjustment Projects														
Water Utilization Projects														
Sub-Total														
Production & Marketing Administration														
Agricultural Conservation Program														
Farmers Home Administration														
Water Facilities Loans														
Production and Subsidized Loans														
Para Ownership Loans														
Sub-Total														
Rural Electrification Administration														
Rural Electrification Loans														
Bureau of Plant Industry, Soils & Agril. Engineering														
Basic Soil Survey of Irrigable Areas														
Basic Soil Survey of Waterable Lands														
Research in Soil & Crop Management under Irrigation														
Sub-Total														
Bureau of Agricultural Economics														
Research on Income Potentials of Irrigation Farming														
Research on Outlook and Facilities for Marketing														
Research on Economic Problems of Irrigation Development														
Research on Economic Problems of Watershed Mgt.														
Sub-Total														
Para Credit Administration														
Study of Loan Experience in Irrigated Areas														
Agricultural Extension Service														
Educ. Prog. in Watershed Mgt. & Irrig. & Drge. Dev. **														
Office of Experiment Stations														
Payments to States for Agricultural Research														
GRAND TOTAL, USDA SIX-YEAR PROGRAM IN NORTH DAKOTA														

\* Entire State.

\*\* Accelerated program only.



## MONTANA, ESTIMATED FUNDS FOR SIX-YEAR PROGRAM

	Estimated Cost		1948		1949		Funds Required by Fiscal Years					Total Est. Cost	
	Total for Non-Cont. Programs	Annual for Cont. Programs	Funds	Fiscal Year	Funds	Fiscal Year	1950	1951	1952	1953	1954	1955	6-Year Program : Cost & Funds : 1950-1955 : Req. after 1955
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
Forest Service													
National Forest Protection, Management & Development	---	2,836,700	710,000	833,500	2,503,000	2,521,300	2,721,200	2,788,800	2,790,800	2,836,700	16,162,400	---	---
Acquisition of Land for National Forests	6,000,000	---	---	---	125,000	190,000	250,000	320,000	320,000	320,000	1,525,000	---	4,475,000
Forest & Range Watershed Research	---	132,000	28,600	28,600	88,000	110,000	99,000	121,000	121,000	132,000	682,000	---	---
Cooperative Fire Protection on State and Private Lands	---	36,000	6,000	6,000	11,000	21,500	31,000	36,000	36,000	36,000	171,500	---	---
Cooperative Tree Planting on State and Private Lands	180,000	---	1,000	1,000	2,500	3,000	4,000	10,000	10,000	10,000	84,500	---	95,500
Educational and Technical Assistance in Forestry	---	73,000	5,500	5,500	8,000	13,000	23,000	38,000	55,500	73,000	210,500	---	---
Sub-total	6,180,000	3,077,700	751,100	874,600	2,737,500	2,848,400	3,139,200	3,313,800	3,359,300	3,437,700	18,835,900	---	4,570,500
Forest Service & Soil Conservation Service													
Flood Control Surveys	115,000	---	17,000	98,000	600,000	727,000	956,000	2,231,000	3,060,000	3,060,000	10,634,000	---	57,110,000
Flood Control Remedial Measures	67,774,000	---	17,000	98,000	600,000	727,000	956,000	2,231,000	3,060,000	3,060,000	10,634,000	---	57,110,000
Sub-total	67,889,000	---	34,000	196,000	1,200,000	1,454,000	1,912,000	4,462,000	6,120,000	6,120,000	21,268,000	---	114,220,000
Soil Conservation Service													
Program of Conservation in Districts	55,123,000	---	300,000	373,000	947,000	1,121,000	1,322,000	1,421,000	1,567,000	1,567,000	7,945,000	---	146,895,000
Technical Service for Drainage	---	---	299,000	373,000	382,000	609,000	768,000	1,008,000	1,127,000	1,127,000	5,021,000	---	10,173,000
Technical Service for Irrigation	15,866,000	35,000	1,500	1,500	80,000	50,000	50,000	50,000	50,000	50,000	35,000	---	---
Snow Surveys	---	---	6,000	6,000	99,000	136,000	110,000	136,000	136,000	136,000	661,000	---	---
Research on Conservation Treatment of Land	838,000	---	3,000	9,000	50,000	98,000	84,000	98,000	97,000	97,000	493,000	---	177,000
Research on Irrigation and Drainage	1,028,000	---	70,000	149,000	85,000	85,000	75,000	65,000	65,000	65,000	340,000	---	535,000
Land Use Adjustment Projects	1,360,000	---	126,000	83,000	145,000	35,000	25,000	25,000	25,000	25,000	140,000	---	780,000
Water Utilization Projects	339,000	---	805,500	894,500	1,618,000	2,951,000	2,134,000	2,803,000	3,032,000	3,027,000	14,995,000	---	58,170,000
Sub-total	71,854,000	35,000	3,400,000	1,600,000	8,140,000	10,100,000	10,100,000	10,100,000	10,100,000	10,100,000	58,900,000	---	---
Production & Marketing Administration													
Agricultural Conservation Program	---	10,100,000	---	---	---	---	---	---	---	---	---	---	---
Farmers Home Administration													
Water Facilities Loan Program	---	---	79,184	98,980	1,105,000	1,285,000	1,799,000	2,056,000	2,056,000	1,927,000	10,228,000	---	---
Production and Subsidy Loans	---	5,187,000	1,212,221	1,552,776	2,006,000	2,405,000	3,332,000	3,862,000	5,187,000	5,187,000	21,979,000	---	---
Farm Ownership Loans	---	4,664,000	388,815	1,886,018	1,387,000	1,788,000	2,609,000	3,609,000	4,664,000	4,664,000	17,721,000	---	---
Sub-total	---	9,851,000	1,710,220	2,137,774	4,498,000	5,478,000	7,740,000	8,327,000	11,907,000	11,778,000	49,928,000	---	---
Rural Electrification Administration													
Rural Electrification Loans	---	---	6,759,000	9,000,000	4,000,000	2,000,000	1,500,000	1,000,000	1,000,000	1,000,000	10,500,000	---	---
Bureau of Plant Industry, Soils & Agri. Engineering													
Basic Soil Survey of Irrigable Areas	500,000	---	---	---	10,000	25,000	29,000	54,000	74,000	62,000	254,000	---	246,000
Basic Soil Survey of Watershed Lands	1,100,000	---	---	---	---	35,000	35,000	148,500	75,000	106,000	299,500	---	800,500
Research in Soil & Crop Management under Irrigation	---	51,000	---	---	---	51,000	51,000	51,000	51,000	51,000	200,000	---	---
Sub-total	1,600,000	51,000	---	---	55,000	111,000	115,000	153,500	200,000	219,000	853,500	---	1,046,500
Bureau of Agricultural Economics													
Research on Income Potentials of Irrigation Farming	---	10,000	---	---	10,000	15,000	15,000	15,000	15,000	10,000	80,000	---	---
Research on Market Outlook and Facilities	---	10,000	---	---	10,000	15,000	15,000	15,000	15,000	10,000	70,000	---	---
Research on Economic Problems of Irrigation Development	---	15,000	---	---	15,000	15,000	15,000	15,000	15,000	15,000	90,000	---	---
Research on Economic Problems of Watershed Mgt.	---	10,000	---	---	10,000	10,000	15,000	15,000	15,000	10,000	75,000	---	---
Sub-total	---	45,000	---	---	45,000	55,000	60,000	60,000	55,000	45,000	320,000	---	---
Farm Credit Administration													
Study of Loan Experience in Irrigated Areas	---	---	---	---	19,200	30,400	10,400	---	---	---	80,000	---	---
Agricultural Extension Service													
Edu. Prog. in Watershed Mgt. & Irrig. & Engr. Dev. **	---	120,750	---	---	74,000	88,000	102,000	108,000	120,750	120,750	613,500	---	---
Office of Experiment Stations													
Payments to States for Agricultural Research	---	145,110	101,680	110,700	115,110	115,110	115,110	115,110	115,110	115,110	870,810	---	---
GRAND TOTAL, USDA SIX-YEAR PROGRAM IN MONTANA	150,523,000	23,425,590	13,514,500	14,715,574	22,221,840	23,633,940	26,301,710	28,441,410	32,979,190	32,932,590	166,510,710	---	121,227,000

•Entire State.

Accelerated program only.



## WYOMING, ESTIMATED FUNDS FOR SIX-YEAR PROGRAM

	Estimated Cost		Fiscal Year		Funds Required by Fiscal Years		1954		1955		Total Est. Cost	
	Total for Non-Cont. Programs	Annual for Cont. Programs	1948	1949	1950	1951	1952	1953	1954	1955	1950-1955	Unallocated Total & Funds Req. after '55
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
<b>Forest Service</b>												
National Forest Protection, Management and Development	---	957,500	350,000	441,200	683,900	895,000	903,900	935,200	936,200	957,500	5,511,700	---
Acquisition of Land for National Forests	1,500,000	---	---	---	25,000	15,000	60,000	75,000	105,000	75,000	558,000	1,116,000
Forest & Range Watershed Research	---	106,000	23,400	---	72,000	81,000	90,000	99,000	105,000	108,000	558,000	---
Cooperative Fire Protection on State and Private Lands	---	12,000	---	---	3,000	4,000	8,000	12,000	12,000	20,000	51,000	---
Cooperative Tree Planting on State and Private Lands	66,000	---	3,100	---	1,000	2,000	2,000	10,000	15,000	20,000	50,000	16,000
Educational & Technical Assistance in Forestry	---	25,800	800	---	3,300	5,800	10,800	15,800	20,800	25,800	82,300	---
Sub-Total	1,566,000	1,103,300	377,300	438,500	988,200	1,032,800	1,074,700	1,117,000	1,167,000	1,198,300	6,608,000	1,161,000
<b>Forest Service and Soil Conservation Service</b>												
Flood Control Survey	95,000	---	20,000	75,000	---	---	---	---	---	---	---	---
Flood Control Remedial Measures	47,519,000	---	20,000	75,000	100,000	189,000	665,000	1,551,000	2,127,000	2,127,000	7,359,000	40,160,000
Sub-Total	47,614,000	---	40,000	150,000	100,000	189,000	665,000	1,551,000	2,127,000	2,127,000	7,359,000	40,160,000
<b>Soil Conservation Service</b>												
Program of Conservation in Districts	38,380,000	---	79,000	154,000	426,000	598,000	757,000	1,172,000	1,537,000	1,537,000	6,027,000	32,120,000
Technical Service for Drainage	8,374,000	---	238,000	238,000	245,000	266,000	353,000	506,000	816,000	816,000	3,002,000	44,896,000
Technical Service for Irrigation	28,000	---	1,500	1,500	70,000	104,000	146,000	40,000	30,000	28,000	248,000	---
Snow Surveys	---	---	7,000	7,000	35,000	50,000	64,000	78,000	78,000	78,000	343,000	---
Research on Conservation Treatment of Land	737,000	---	---	---	51,000	68,000	65,000	79,000	79,000	79,000	441,000	354,000
Research on Irrigation and Drainage	847,000	---	---	---	24,000	24,000	24,000	20,000	20,000	20,000	132,000	506,000
Land Use Adjustment Projects	440,000	---	---	---	---	---	---	---	---	---	---	230,000
Water Utilization Projects	---	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	48,848,000	28,000	349,500	426,500	871,000	1,046,000	1,323,000	1,895,000	2,560,000	2,558,000	10,233,000	38,106,000
<b>Production and Marketing Administration</b>												
Agricultural Conservation Program	---	4,900,000	1,700,000	800,000	4,000,000	4,900,000	4,900,000	4,900,000	4,900,000	4,900,000	28,500,000	---
<b>Farmers Home Administration</b>												
Water Facilities Loan Program	---	---	65,325	81,656	640,000	745,000	1,043,000	1,191,000	1,191,000	1,117,000	5,927,000	---
Production and Subsidized Loans	---	2,445,000	1,146,932	1,433,662	1,245,000	1,396,000	1,742,000	1,846,000	2,145,000	2,145,000	11,223,000	---
Farm Ownership Loans	---	2,585,000	247,705	309,631	684,000	922,000	1,377,000	1,377,000	2,575,000	2,575,000	9,570,000	---
Sub-Total	---	5,090,000	1,459,962	1,824,949	2,569,000	3,063,000	4,166,000	4,534,000	6,221,000	6,117,000	26,720,000	---
<b>Rural Electrification Administration</b>												
Rural Electrification Loans	---	---	1,990,000	3,000,000	3,000,000	1,000,000	1,000,000	700,000	700,000	700,000	7,100,000	---
<b>Bureau of Plant Industry, Soils and Agri. Engineering</b>												
Basic Soil Survey of Irrigable Areas	310,000	---	---	---	---	21,000	42,000	33,000	56,000	30,000	182,000	128,000
Basic Soil Survey of Watershed Lands	690,000	---	---	---	---	7,000	28,000	46,000	61,000	114,000	256,000	434,000
Research in Soil & Crop Management under Irrigation	---	---	---	---	30,000	34,000	34,000	34,000	34,000	34,000	200,000	---
Sub-Total	1,000,000	---	---	---	30,000	42,000	104,000	113,000	151,000	178,000	638,000	562,000
<b>Bureau of Agricultural Economics</b>												
Research on Income Potentials of Irrigation Farming	---	10,000	---	---	10,000	15,000	15,000	15,000	15,000	10,000	80,000	---
Research on Market Outlook and Facilities	---	10,000	---	---	10,000	10,000	15,000	15,000	15,000	15,000	65,000	---
Research on Economic Problems of Irrigation Develop.	---	15,000	---	---	10,000	10,000	10,000	15,000	15,000	15,000	75,000	---
Research on Economic Problems of Watershed Mgt.	---	10,000	---	---	10,000	10,000	15,000	15,000	15,000	15,000	75,000	---
Sub-Total	---	45,000	---	---	40,000	45,000	55,000	55,000	55,000	45,000	285,000	---
<b>Farm Credit Administration</b>												
Study of Loan Experience in Irrigated Areas	---	---	---	---	14,400	22,800	7,800	---	---	---	45,000	---
<b>Agricultural Extension Service</b>												
Ext. Prog. in Watershed Mgt. & Irrig. & Drge. Dev. **	---	52,000	---	---	38,250	43,000	45,500	49,750	52,000	52,000	280,500	---
<b>Office of Experiment Stations</b>												
Payments to States for Agricultural Research	---	108,720	79,200	85,680	108,720	108,720	108,720	108,720	108,720	108,720	652,320	---
<b>GRAND TOTAL, SIX-YEAR USDA PROGRAM IN WYOMING</b>	99,028,000	11,301,020	5,978,962	6,650,629	12,059,570	11,812,320	13,469,720	15,053,470	18,041,720	18,041,720	88,430,820	79,989,000

\* Entire State.

\*\* Accelerated program only.



COLORADO, ESTIMATED FUNDS FOR SIX-YEAR PROGRAM

	Estimated Cost	1948	1949	Funds	1950	1951	1952	1953	1954	1955	Total Est. Cost : Total Unshared.
	Total for Construction	Annual For Construction	Piscal Year : Funds	Piscal Year : Funds	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	6-Year Prog. : Cost & Funds
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	1950-1955 : Req. after '55
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
<b>Forest Service</b>											
National Forest Protection, Management & Development	---	731,200	300,000	352,300	651,000	657,100	705,500	721,300	722,300	731,200	4,188,400
Acquisition of Land for National Forest	---	---	---	---	100,000	150,000	200,000	250,000	250,000	250,000	1,200,000
Forest & Range Watershed Research	---	60,000	13,000	13,000	10,000	15,000	50,000	55,000	60,000	60,000	310,000
Cooperative Fire Protection on State & Private Lands	---	10,000	6,000	6,300	7,600	10,000	10,000	10,000	10,000	10,000	57,600
Cooperative Tree Planting on State & Private Lands	---	---	600	600	3,000	4,000	5,000	10,000	15,000	20,000	57,000
Educational & Technical Assistance in Forestry	---	26,700	5,400	5,400	7,900	11,600	15,300	19,100	22,900	26,700	133,500
Sub-Total	5,680,000	827,900	325,600	377,500	809,500	877,700	989,800	1,055,100	1,060,200	1,097,900	5,915,500
<b>Forest Service &amp; Soil Conservation Service</b>											
Flood Control Surveys	112,000	---	27,000	85,000	---	---	---	---	---	---	---
Flood Control Remedial Measures	35,861,000	---	---	---	250,000	258,000	508,000	1,185,000	1,625,000	1,625,000	5,141,000
Sub-Total	35,973,000	---	27,000	85,000	250,000	258,000	508,000	1,185,000	1,625,000	1,625,000	5,141,000
<b>Soil Conservation Service</b>											
Program of Conservation in Districts	22,060,000	---	70,000	91,000	316,000	479,000	601,000	920,000	1,202,000	1,202,000	4,750,000
Technical Service for Drainage	17,300,000	---	256,000	274,000	352,000	387,000	513,000	734,000	1,185,000	1,185,000	4,356,000
Technical Service for Irrigation	---	15,000	1,500	1,500	50,000	20,000	20,000	20,000	15,000	15,000	110,000
Snow Surveys	---	---	---	---	---	---	---	---	---	---	---
Research on Conservation Treatment of Land	705,000	---	4,000	---	35,000	47,000	59,000	72,000	72,000	72,000	357,000
Research on Irrigation and Drainage	812,000	---	9,000	21,000	36,000	44,000	51,000	70,000	70,000	70,000	341,000
Land Use Adjustment Projects	210,000	---	12,000	10,000	10,000	10,000	10,000	9,000	9,000	9,000	57,000
Water Utilization Projects	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	12,017,000	15,000	352,500	397,500	859,000	987,000	1,254,000	1,825,000	2,553,000	2,553,000	10,001,000
<b>Production &amp; Marketing Administration</b>											
Agricultural Conservation Program	---	6,100,000	1,800,000	800,000	1,100,000	6,100,000	6,100,000	6,100,000	6,100,000	6,100,000	34,600,000
<b>Farmers Home Administration</b>											
Water Facilities Loans	---	---	52,098	65,122	258,000	300,000	420,000	480,000	480,000	450,000	2,488,000
Production and Subsidies Loans	---	3,535,000	810,626	1,013,282	1,255,000	1,500,000	2,205,000	2,585,000	3,535,000	3,535,000	15,000,000
Farm Ownership Loans	---	1,372,000	365,537	456,921	594,000	662,000	886,000	1,186,000	1,372,000	1,372,000	6,000,569
Sub-Total	---	4,907,000	1,228,261	1,535,325	2,107,000	2,552,000	3,511,000	3,951,000	5,387,000	5,387,000	22,185,500
<b>Rural Electrification Administration</b>											
Rural Electrification Loans	---	---	5,539,000	10,000,000	3,000,000	2,000,000	1,500,000	600,000	800,000	1,000,000	8,900,000
<b>Bureau of Plant Industry, Soils &amp; Agri. Engineering</b>											
Basic Soil Survey of Irrigable Areas	260,000	---	---	---	---	---	---	---	---	---	---
Basic Soil Survey of Watershed Lands	515,000	---	---	---	---	---	---	---	---	---	---
Research in Soil & Crop Management under Irrigation	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	775,000	---	---	---	---	---	---	---	---	---	---
<b>Bureau of Agricultural Economics</b>											
Research on Income Potentials of Irrigation Farming	10,000	---	---	---	10,000	15,000	15,000	15,000	15,000	10,000	80,000
Research on Market Outlook and Facilities	---	---	---	---	---	---	---	---	---	---	---
Research on Economic Problems of Irrig. Development	10,000	---	---	---	10,000	15,000	10,000	10,000	10,000	10,000	60,000
Research on Economic Problems of Watershed Mgt.	10,000	---	---	---	5,000	15,000	10,000	10,000	10,000	10,000	50,000
Sub-Total	40,000	---	---	---	35,000	45,000	50,000	50,000	45,000	40,000	285,000
<b>Farm Credit Administration</b>											
Study of Loan Experience in Irrigated Areas	---	---	---	---	5,280	8,360	2,860	---	---	---	16,500
<b>Agricultural Extension Service</b>											
Reg. Program in Watershed Mgt. & Irrig. & Drge. Dev. **	---	---	---	---	33,500	36,000	40,250	46,000	46,000	46,000	217,750
<b>Office of Experiment Stations</b>											
Payments to States for Agricultural Research	---	54,000	36,450	40,230	54,000	54,000	54,000	54,000	54,000	54,000	324,000
<b>GRAND TOTAL, USDA 6-YEAR PROGRAM IN NEBRASKA</b>	84,445,000	11,989,900	9,308,811	13,235,655	11,223,280	12,923,060	11,061,910	14,955,400	17,790,700	17,974,900	88,935,250
											66,680,500

\* Entire State.

\*\* Accelerated program only.



PROPOSED SIX-YEAR PROGRAM OF AGRICULTURAL LAND AND WATER RESOURCE CONSERVATION AND DEVELOPMENT FOR THE MISSOURI BASIN, 1950-1955

	Estimated Cost	1948	1949	1950	1951	1952	1953	1954	1955	Total, Est. Cost	Total Unallocated
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)
<b>Forest Service</b>											
Acquisition of Land for National Forests	5,311,000	1,750,000	2,056,000	4,748,000	4,791,000	5,076,000	5,217,000	5,222,000	5,311,000	30,365,000	---
Forest and Range Watershed Research	---	5,000	7,000	500,000	750,000	1,000,000	1,250,000	1,250,000	1,250,000	6,000,000	---
Cooperative Fire Protection on State and Private Lands	600,000	130,000	130,000	400,000	450,000	500,000	550,000	600,000	600,000	3,100,000	---
Cooperative Tree Planting on State and Private Lands	200,000	10,000	44,800	75,000	100,000	150,000	200,000	200,000	200,000	925,000	---
Educational and Technical Assistance in Forestry	7,382,000	17,300	17,300	60,000	80,000	100,000	100,000	100,000	100,000	400,000	---
Sub-Total	6,676,300	1,982,300	2,255,100	5,343,000	6,285,300	7,015,800	7,706,300	7,987,100	8,226,300	41,640,000	---
<b>Forest Service and Soil Conservation Service</b>											
Flood Control Surveys	1,128,000	354,000	774,000	6,903,000	8,089,000	10,542,000	20,636,000	27,972,000	28,022,000	102,164,000	---
Flood Control Remedial Measures	664,008,000	1,151,000	1,500,000	6,903,000	8,089,000	10,542,000	20,636,000	27,972,000	28,022,000	102,164,000	---
Sub-Total	665,136,000	1,505,000	2,274,000	13,806,000	16,178,000	21,084,000	41,272,000	55,944,000	56,044,000	204,328,000	---
<b>Soil Conservation Service</b>											
Program of Conservation in Districts	547,037,000	3,661,000	4,347,000	6,100,000	8,374,000	10,373,000	15,006,000	19,742,000	19,742,000	79,637,000	---
Technical Service for Drainage	7,583,000	31,000	32,000	1,601,000	539,000	617,000	617,000	623,000	623,000	3,513,000	---
Technical Service for Irrigation	73,453,000	1,241,000	1,425,000	1,536,000	2,082,000	2,531,000	3,667,000	5,072,000	5,072,000	19,880,000	---
Snow Surveys	---	4,500	4,500	210,000	115,000	115,000	115,000	89,000	81,000	725,000	---
Research on Conservation Treatment of Land	10,710,000	92,000	111,000	545,000	745,000	945,000	1,115,000	1,115,000	1,115,000	5,670,000	---
Research on Irrigation and Drainage	8,483,000	29,000	103,000	398,000	553,000	646,000	773,000	773,000	773,000	3,916,000	---
Land Use Adjustment Projects	4,320,000	203,000	191,000	270,000	233,000	255,000	233,000	233,000	233,000	1,164,000	---
Water Utilization Projects	3,356,000	217,000	113,000	170,000	700,000	905,000	565,000	150,000	90,000	2,680,000	---
Sub-Total	654,952,000	5,531,500	6,356,500	10,323,000	13,298,000	16,387,000	22,121,000	27,827,000	27,759,000	117,715,000	---
<b>Production and Marketing Administration</b>											
Agricultural Conservation Program	---	131,900,000	18,100,000	94,800,000	131,900,000	131,900,000	131,900,000	131,900,000	131,900,000	754,300,000	---
<b>Farmers Home Administration</b>											
Water Facilities Loan Program	---	317,404	396,730	4,306,000	5,010,000	7,014,000	8,015,000	8,015,000	7,511,000	39,874,000	---
Production and Subsistence Loans	82,903,000	9,280,698	11,598,057	22,688,000	30,226,000	47,799,000	57,334,000	82,903,000	82,903,000	323,873,000	---
Farm Ownership Loans	28,642,000	12,169,351	15,206,668	11,261,000	16,051,000	19,648,000	19,648,000	28,642,000	28,642,000	126,892,000	---
Sub-Total	111,545,000	21,765,593	27,201,435	41,255,000	51,287,000	74,161,000	84,997,000	119,560,000	119,059,000	490,619,000	---
<b>Rural Electrification Administration</b>											
Rural Electrification Loans*	---	130,215,000	174,000,000	75,000,000	12,000,000	33,500,000	30,300,000	27,000,000	25,700,000	233,500,000	---
<b>Bureau of Plant Industry, Soils and Agricultural Eng.</b>											
Basic Soil Survey of Irrigable Areas	1,840,000	---	---	---	---	---	---	---	---	---	---
Basic Soil Survey of Watershed Lands	10,450,800	14,000	22,000	238,000	137,000	256,400	246,000	248,000	153,400	1,348,800	502,000
Research in Soil & Crop Management under Irrigation	---	27,500	38,500	63,500	203,000	450,000	634,300	786,100	982,600	3,119,800	---
Sub-Total	12,291,600	14,000	60,500	676,500	825,000	1,131,100	1,305,300	1,459,100	1,561,000	6,998,600	7,833,000
<b>Bureau of Agricultural Economics</b>											
Research on Income Potentials of Irrigation Farming	---	---	---	---	---	---	---	---	---	---	---
Research on Market Outlook and Facilities	---	---	---	---	---	---	---	---	---	---	---
Research on Economic Problems of Irrigation Development	---	---	---	---	---	---	---	---	---	---	---
Research on Economic Problems of Watershed Management	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	---	---	---	---	---	---	---	---	---	---	---
<b>Farm Credit Administration</b>											
Study of Loan Experience in Irrigated Areas	---	---	---	---	---	---	---	---	---	---	---
<b>Agricultural Extension Service</b>											
Edu. Program in Watershed Mgt. & Irrig. & Drainage Dev. **	879,500	---	---	---	---	---	---	---	---	---	---
Office of Experiment Stations	---	---	---	---	---	---	---	---	---	---	---
Payments to States for Agricultural Research	---	---	---	---	---	---	---	---	---	---	---
Sub-Total	879,500	---	---	---	---	---	---	---	---	---	---
<b>GRAND TOTAL, USDA SIX-YEAR PROGRAM IN THE MISSOURI BASIN</b>	1,363,761,600	202,611,963	231,597,965	237,089,010	256,255,910	277,627,160	301,690,710	316,418,510	344,980,310	1,764,061,910	---

\* Estimate for entire 10 states (not just the Missouri Basin portion).

\*\* Accelerated program only.



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